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# NORTHEASTERN UNIVERSITY BULLETIN

(AUGUST ISSUE)



# 1977-1978

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NEW ENGLAND  
ASSOCIATION  
OF SCHOOLS  
AND COLLEGES  
ACCREDITED MEMBERS

The New England Association of Schools and Colleges accredits schools and colleges in the six New England states. Membership in one of the six regional accrediting associations in the United States indicates that the school or college has been carefully evaluated and found to meet standards agreed upon by qualified educators. Colleges support the efforts of public school and community officials to have their secondary schools meet the standards of membership.

# **NORTHEASTERN UNIVERSITY BULLETIN**

**1977  
1978**

## **BASIC CATALOG**

Boston-Bouvé College  
College of Business Administration  
College of Criminal Justice  
College of Education  
College of Engineering  
College of Liberal Arts  
Lincoln College  
College of Nursing  
College of Pharmacy and  
Allied Health Professions



## **A Message from the President**

*These are interesting and exciting days in the City of Boston. Stimulated by the Bicentennial celebration, hundreds of thousands of people from all around the world continue to walk the Freedom Trail and visit such historic sites as Faneuil Hall, Old Ironsides, the Old North Church, Lexington and Concord.*

*It is my hope that you will be able to visit Boston during the upcoming year and learn more about the city and about Northeastern. The University is located in the very midst of the many cultural and historic sites where numerous special events take place. For decades now, Northeastern University has been an institution deeply committed to community service and the betterment of this unique city.*

*Through our world-famous Cooperative Plan of Education, Northeastern's undergraduate students have worked within the community of Boston and most of the other major metropolitan areas of the United States in a variety of positions which have enabled them to gain practical experience while, at the same time, they have contributed to the communities in which they work.*

*By your participating in the combination of work and study available to you after your freshman year, and in Engineering and Business Administration during the freshman year, you will find that the words "relevance" and "motivation" gain real meaning. You may be helping others, but you will also find two invaluable built-in features of the co-op plan. For one, you will be able to earn a substantial portion of your college expenses. In addition, you will be able, upon graduation, to offer a prospective employer the equivalent of two years of on-the-job-experience, a particularly important point in these days of a tight job market in many professions.*

*Even more important, Northeastern University is concerned with providing you with an education of the highest quality. You will be ex-*

*posed to an outstanding faculty, one strongly committed to you as an individual, to your development as a well rounded person, and to your development as an individual capable of clear, logical thinking, confident of your abilities, and ready to make contributions to your employers and the community.*

*At Northeastern University we have managed to attract a faculty concerned with both teaching and research, one dedicated to the passing of knowledge to young adults. More than 60 percent of the faculty possess a doctoral degree but, more importantly, as a group they possess a dedication to the teaching process and its improvement, so that you will be the beneficiary.*

*We hope to greet you in Boston and look forward to serving you should you decide to avail yourself of the many programs and services at Northeastern University.*

**Kenneth G. Ryder**

**Equal Opportunity Policy**  
Northeastern University is committed to providing equal opportunity for all. In matters involving admission, registration, and official relationships with students—including evaluation of academic performance—the University insists on a policy of nondiscrimination. Northeastern is also an equal opportunity employer. It is institutional policy that there shall be no discrimination against any employee or applicant for employment because of race, color, religion, sex, age, national origin, or on the basis of being a handicapped but otherwise qualified individual. In addition, Northeastern takes affirmative action in recruitment of students and employees. Inquiries concerning our equal opportunity policies may be referred to the University Affirmative Action officer and/or the Title IX coordinator.



*This bulletin has been designed to help you plan your education and career, as well as provide the information you need to apply for admission.*

*Naturally, we are enthusiastic about what Northeastern can offer: fully accredited programs in an exciting urban setting, plus something special—the unique learning experience of combined work and study at the institution that developed the Cooperative Education Plan.*

*We encourage early application for admission and hope we can be of service to you.*

**The Committee on Admissions  
Department of Admissions  
Northeastern University  
360 Huntington Avenue  
Boston, Massachusetts 02115  
Tel. (617) 437-2200**





**Tuition and Regulations**  
Tuition rates, all fees, rules and regulations, courses and course content are subject to revision by the President and Board of Trustees at any time.



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**PART I**



**ABOUT  
NORTHEASTERN**

## ABOUT NORTHEASTERN

### The Philosophy of Education

Northeastern has never forgotten its original purpose: to offer an education to all qualified students who possess both the desire for additional knowledge and the determination to acquire it in spite of possible hardships.

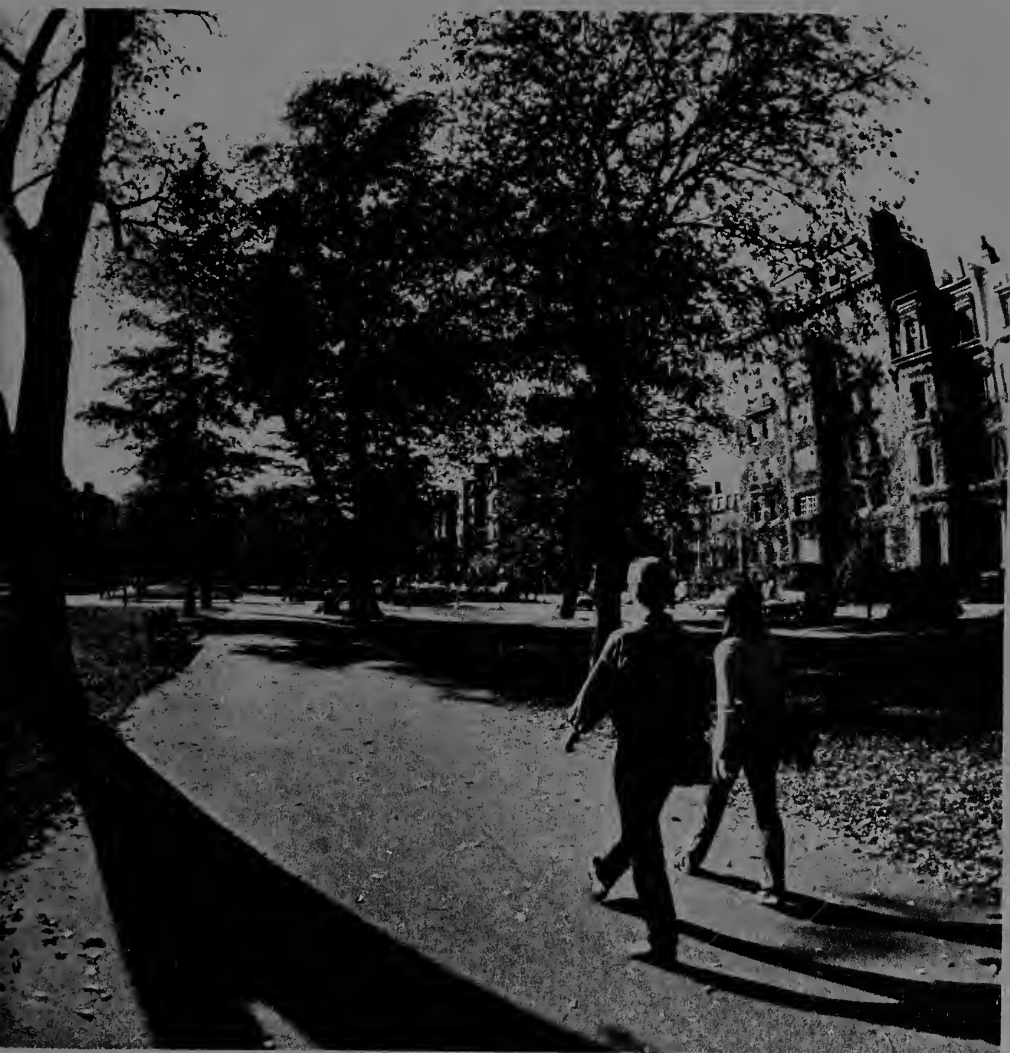
Because Northeastern is fully aware of the importance of using all its resources to help solve monumental — and universal — social problems, its long experience in creating opportunities for productive work as a part of the total educational experience is particularly significant today. The University has also helped many members of minority groups obtain an education.

Northeastern's Boston location and the fact that it is the largest Cooperative Plan university in the world provide opportunities for student involvement in areas of national concern. For example, you as an undergraduate can have cooperative work assignments in such areas as air pollution research, rehabilitation, medical research, social service, environmental studies, and law enforcement. Student activities, too, offer a chance to "be where the action is": namely, in a wide variety of community-action programs, many of which help handicapped people, ghetto residents, and minority groups.

Today's socially conscious students often wish to continue their education on the graduate level. In response to this desire, Northeastern has extended its Cooperative Plan to some areas of graduate education. One example is the School of Law, which offers a curriculum substantially shaped around the important social issues of our time.

Many prominent educators, including those who are graduates of traditional, non-Cooperative Plan schools, are now urging that *all* college students have opportunities for on-the-job experience before graduation. These educators realize that the practical experience thus gained can strengthen college curricula.

Thus by alternating between classroom instruction and cooperative assignments, you, as a Northeastern student, are in a much better position to examine, doubt and explore than your counterpart at other educational institutions. You have the opportunity to test the opinions you have formed. You see society not for what it is, but for what it can be.



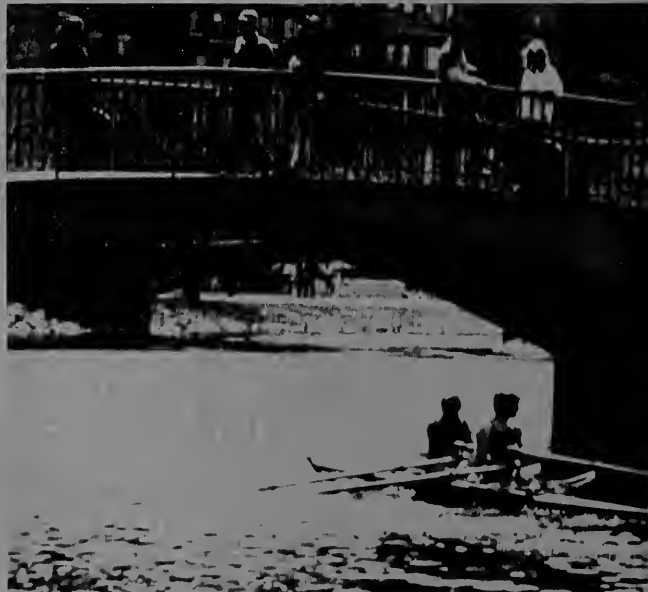
## Boston & Northeastern

Northeastern University offers you more than the traditional college education.

The University community includes people from every intellectual, political, economic, racial, ethnic, and religious background. Its location naturally attracts such a diversified student body and excellent faculty.

Newspapers, magazines, and the media have spread the word: Boston is where young people are. A mixture of Old World tradition and modern urban America, it is a city where youth can explore a rich and varied history and contribute much to social consciousness. It is the perfect college town, where the past is appreciated, the present enjoyed, and the future anticipated.

Through the Co-op Plan, Northeastern students live in the city, work in the city, and contribute to the city. They are teacher aides in ghetto schools; business administration interns in law offices and accounting firms; nursing trainees in some of the most famous hospitals in the world; engineering co-ops in outstanding corporations. In short, Northeastern students work all over Boston.











And the City—what of Boston?—where you can follow the well-worn cobblestones and bricks from Paul Revere's home to Faneuil Hall, the Common and Beacon Hill; browse in old book shops, wander through art galleries along Newbury Street; shop for food in the outdoor markets of the North End; and buy jeans for sailing along the Charles River or designer originals for an opening night at Symphony Hall or the new Boston Center for the Arts, home of the Boston Ballet and Opera Company. Everyone knows about Boston's seafood, but you can also sample Spanish, Chinese, Greek, German, Italian and French food, make the round of English pubs, and see the varied architecture of the past (State House, Back Bay, Beacon Hill), and of *now* (Government Center, Copley Square Plaza, the Prudential Center, the Christian Science Church Complex).



**Boston is the city of colleges. Boston University, Simmons College, Emmanuel College, and MIT are within walking distance of Northeastern. So are the Museum of Fine Arts, Symphony Hall, the Gardner Museum, the New England Conservatory of Music, Jordan Hall, Horticultural Hall and the Boston Public Library.**



By boarding the subway, students can easily travel to the theatre district, where pre-Broadway plays “tryout” and innovative young artists produce their own contemporary hits.









Sports fans can see four major professional teams in the Boston area. The Bruins and the Celtics play at the Boston Garden and the Red Sox play their home games within a mile of the Northeastern campus. The New England Patriots are just down the road in Foxboro and, at Longwood, you can see World Class Tennis every summer. New Hampshire and Vermont offer some of the best skiing in the country. Then, of course, there are the crew races on the Charles.

Boston is where  
Northeastern is; and  
Northeastern is Boston.





## Buildings and Facilities

The main campus of Northeastern University is located on Huntington Avenue in the Back Bay section of Boston, near the Fenway.

Northeastern's 50-acre campus is divided by Huntington Avenue, with the educational buildings on the south side and dormitories on the north.

The main educational buildings, all of which have been completed since 1938, are of glazed-brick construction in the contemporary classic style. Most are interconnected by closed passageways so that students and faculty may move from building to building under shelter during the winter months.

In Richards Hall are located some of the main administrative offices of the University, the office of the College of Liberal Arts, offices and laboratories of the Biology Department, the Departments of Philosophy, History, and Political Science, and Mechanical Engineering laboratories.

The Sarkis and Vosgitel Mugar Life Sciences Building contains the College of Pharmacy and Allied Health Professions, the Departments of Chemical Engineering and Chemical Analysis and Forensic Science, and a variety of teaching and research laboratories. Portions of both the Biology and Psychology Departments are also accommodated within the building.

Centrally located, the Dodge Library operates on an open-stack plan and is equipped to serve the varied needs of the student body. This includes the Art Gallery; an official depository for government publications and documents; and the Learning Center, which consists of the Language Laboratory, Music Listening Center and individualized television consoles.

The Carl S. Eli Student Center provides facilities for student recreation and curricular activities. The Alumni Auditorium, with a seating capacity of 1,300, is part of this building. Also included are the Music Department, the Chapel, Office of the Dean of Students, special drama facilities, a ballroom, a main lounge, fine arts areas, student offices, conference rooms, meeting areas, a student dining area seating more than 1,000, a pub, and a new patio area for socializing.

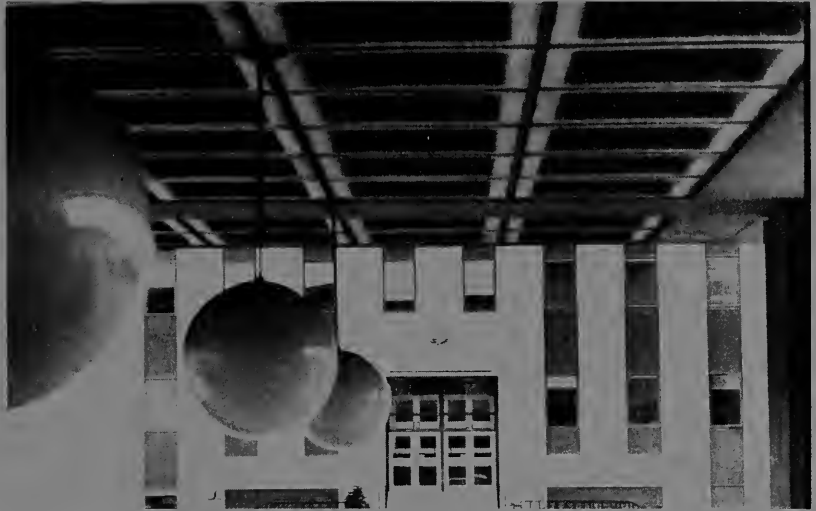
Hayden Hall contains the principal facilities of the Colleges of Engineering, Business Administration and Lincoln College. Many offices of the Graduate and Professional schools are located here, together with those of the University Registrar and other administrators. The Electrical Engineering Laboratories are housed in Hayden Hall.

University College's administrative offices are located in Churchill Hall along with the Division of Adult and Continuing Education, the Insurance Institute, and the Drama Department. Other areas of the building contain physics laboratories and, on the ground floor, the faculty and staff cafeteria.

The Godfrey Lowell Cabot Physical Education Center is one of the best equipped in New England. It contains four basketball courts, an indoor track facility and a rifle range, as well as administrative offices for the Department of Athletics and for the Physical Education Department of Boston-Bouvé College. In addition, it houses the Northeastern University Hall of Fame, and a baseball sports museum.







Mary Gass Robinson Hall contains the offices of the College of Nursing and the Departments of Physical Therapy, Rehabilitation and Special Education; nursing, biology, and physical therapy laboratories; radio and television facilities; lecture rooms, and classrooms.

The United Building complex is the location of the offices of the Departments of English, Economics, Journalism, Mathematics, Modern Languages, Psychology, Sociology, Industrial Engineering and Mechanical Engineering, and research facilities for Biology, Psychology and Mechanical Engineering. Graduate Placement Services, the International Student Office, Pediatric Nursing, the African-American Studies Department, and the Art Department and its studios are also located there.

The Charles A. Dana Research Center houses research facilities for Physics and Electrical Engineering.

The African-American Institute is a three-story structure unique because of the many varied programs and facilities located within it. The African-American Studies Department classrooms, lecture rooms, study areas and library are currently housed on the third floor. Administrative offices occupy the second floor, with the first floor equipped with recreational facilities and office space for student organizations.

Three other buildings on the campus have been completely remodeled and reconditioned for educational purposes. These are the Botolph Building, which houses the Department of Civil Engineering; the Forsyth Building, in which are located the University Health Services and the planetarium; and the Greenleaf Building, housing the Earth Sciences, Graphic Sciences, and Military Science Departments and research facilities, and the Psychology Testing Area.

A five-story structure, the Charles and Estelle Dockser Hall, contains Boston-Bouvé administrative offices, classrooms, laboratories, and faculty offices, as well as a library, dance studio, gymnasium, and recreation center.

The College of Education and its various departments are housed in Cahners and Cushing Halls along Boston's Fenway.

The Barletta Natatorium, an addition to the Cabot Center, contains a 105-foot swimming pool for instruction and intercollegiate competition, a practice tank for the rowing team, a weight room, handball courts, and shower and dressing facilities.







Devoted entirely to chemistry, the Edward L. Hurtig Hall houses classrooms and laboratories for undergraduates as well as special research facilities for graduate students and faculty. It also contains the departmental library as well as lecture halls and offices.

The Stearns Center houses the offices of the Department of Cooperative Education, the Center for Cooperative Education, the Institute for Off-Campus Experience, the Center for Secondary School Work Experience Education, The Cooperative Education Research Center and the National Commission for Cooperative Education. Several conference rooms and meetings rooms are available to serve the needs of the various departments.

Completed in 1969, the Asa S. Knowles Center is one of the University's newest buildings. It is the headquarters of the School of Law and the College of Criminal Justice.

Ethel G. and Reuben B. Gryzmish Hall, the section of the Knowles Center in which the School of Law is housed, was opened in 1970. Gryzmish Hall is a building especially designed for the School's distinctive program of legal education. It contains a law library, student lounge, moot courtroom, jury room, judge's chambers, classrooms, and offices.

John A. Volpe Hall, the second section of the Knowles Center, is the headquarters of the College of Criminal Justice. Volpe Hall was dedicated in the spring of 1972.

## A Student's Voice



Northeastern has two unique characteristics which set it apart from other schools: 1) its location, and 2) the Cooperative Plan of Education.

Boston, Massachusetts, known affectionately as the "Hub of the Universe," offers all things to all people. A city rich in historic facts and landmarks, Boston is a physical reality of the history of our nation.

Boston maintains its quaintness while offering all the advantages of a big city. Although large numbers of transient students enter and leave each fall and spring, Boston recognizes us as a stable factor. There are parks, zoos, museums, sports parks, concerts, coffeehouses, ballet, opera, puppet-shows, and theater performances; if it exists, Boston's superb cultural center will offer it.

In turn, the Cooperative Plan of Education (co-op) offers students the unique opportunity to test out and experience their chosen occupation *before* graduation. Many times a student will study, graduate, and enter a field, realizing too late that it is not a field in which he/she chooses to remain.

Northeastern University has over the years built a reputation of supplying local, national, and international businesses with bright, qualified, level-headed students to fill co-op work assignments. This ideal situation provides students with an opportunity to apply what they have learned in class in a job where they can work their way up. The types of jobs available and the salaries offered vary with major, year, and grades. It should be noted that the best jobs generally go to students who have earned the highest marks. A prospective employer uses grades as a way of determining if you will be reliable and diligent in your job.

No student should feel a job is beneath his/her talents. Rather, we are all students who are constantly learning, and any job serves as a training ground. It is up to the individual to seek and find those qualities most beneficial to their development.

The Experiential Program offered through the Co-op Department enabled me to participate in the Presidential Campaign of Congressman Mo Udall this past year. I traveled with the campaign for three months and thrived on the grueling schedule. Beginning as a field co-ordinator, I earned the responsibility of coordinating a district office. The experience has proven invaluable.

Academics at Northeastern offer both a scholarly and a practical approach to education. The courses which I have taken as a political science major have equalled my expectations. The faculty arrange conference hours, so that they will be accessible to students who need extra help.

What of the social life and group activities at N.U.? We have a wide range of clubs and organizations—one hundred and thirty to be exact. Whatever your interest may be, I am sure you will find a student organization which caters to it; if not, start your own.

Northeastern is similar to other universities in that you receive as much as you give; therefore, wherever you decide to attend school, become involved. Northeastern certainly gives you that chance.

**JoAnne Varnadoe**

## **The Faculty— Scholars, Innovators, Advisers**

Coming from almost every state in the nation and numerous foreign countries, our faculty members are chosen for their enthusiasm for teaching, their ability to stimulate intellectual and scientific curiosity, and their genuine understanding of young people.

Northeastern faculty re-examine and re-evaluate curriculum constantly to keep pace with the changing needs of students. As a result of this practice, many opportunities are available here which few other institutions can provide. As a student in the College of Liberal Arts you can, with the assistance of a counselor in the Dean's Office and a faculty adviser, plan your own program as part of an "Independent Major," thereby receiving preparation not provided by conventional concentrations. Information about application for the Independent Major may be found on page 109.

In the College of Engineering, assistance in selecting courses and choosing a major begins in the freshman year. Faculty advisers, each responsible for a small group of freshmen students, work under the direction of a master engineering adviser and the staff of the Dean of Students. Upperclass students are assigned faculty advisers from their major department. The College of Engineering curriculum, under constant review by the departments, is frequently revised to keep current with developments in the field. Recently, for example, computer science has been included as an option in the General Engineering Program, and computer engineering has been added to the Electrical Engineering Program.

The College of Business Administration offers a number of concentrations, plus an option for those who prefer a more general background in management. If you need academic counseling, the student personnel office of the College offers its services on an open-door basis. There is also a Student Advisory Committee which represents your interests and viewpoint and prepares student/teacher/course evaluations.

Cooperative work experience is particularly important for students in the College of Education. In a tight job market, graduates who have worked in schools, clinics, or other social agencies have a distinct advantage over those without such experiences. Students receive a solid liberal education in the course of qualifying for certification as elementary or secondary school teachers. The several emphases available to Elementary Education majors, for example, provide an opportunity for study in depth and serve as a basis for graduate specialization. The new Music Education major prepares graduates to serve at all grade levels.

The Colleges of Education, Criminal Justice, and Liberal Arts offer an undergraduate major in Human Services to students in these colleges who, in addition to meeting the requirements of their "home" college, take courses in each of the other two. In their junior and senior years, Human Services majors participate in supervised work experiences as preparation for entry into a wide and growing field. For details of the program, see page 166.



Northeastern's College of Nursing programs were the first in the country to be offered on a "co-op" basis. Through affiliation with twenty-one hospitals in the Greater Boston area, you are provided with a variety of clinical experience settings. The College strives to meet your needs by encouraging student representation on the majority of its standing committees.

As a Physical Education student, you may specialize at the elementary or secondary level or graduate as a generalist. You may now also elect concentrations in dance, science, coaching, athletic training, or other possibilities as second teaching areas. Many school systems are now adding drug education and sex education courses, and Northeastern's Health Education major can prepare you for these varied teaching experiences, as well as for the broad program in Health.

Physical Therapy offers the only program in the United States developed on the Cooperative Plan with alternating work-study experiences related to the curriculum, thus strengthening classroom and laboratory learning. In fact, all four departments in Boston-Bouvé College are offered on the five-year plan. Recreation students may elect one of three tracks as specialization — Therapeutic Recreation, Community Recreation, or Outdoor Education and Recreation.

When you are a pharmacy major, you may elect courses in clinical and hospital pharmacy, community pharmacy or areas which prepare for a research career in one of the pharmaceutical sciences. The program also includes the possibility of taking courses from other schools within the University.

Lincoln College's Bachelor of Engineering Technology (BET) program is distinctly different from typical engineering curricula. It prepares you for a unique and pivotal position on the professional-technologist-craftsman team. More than 100,000 technologists will be needed each year (schools now graduate only 25,000 per year) to work with engineers, scientists, doctors, supervisors, and artisans. The freshman year of the BET program contains course work which can also be used as excellent preparation for entering colleges of engineering.

The Cooperative Plan, and an emphasis upon applied rather than theoretical courses, contributes to the program in the College





of Criminal Justice. Graduates have found careers in law enforcement, industrial and retail security, criminalistics, corrections, rehabilitation and social services. Because of the academic nature of the program, many students have also undertaken graduate study in criminology, law, public affairs and social work.

Those of you in the Division of Allied Health Professions are prepared, through classroom study and authentic clinical experience during co-op, to assume a professional role in one of today's health fields. The programs in Medical Laboratory Science, including medical technology and cyto-technology, prepare you to assume laboratory duties at several levels in either co-op positions or part-time jobs while completing your baccalaureate degree program. Upon graduation, you are eligible for national registration examinations and also for graduate study. If you complete the Associate in Science degree in Respiratory Therapy, you may pursue a related baccalaureate degree program.

It has been said that "the most essential thing in the work of education is that sympathetic touch of life on life. It is by that fine process that personality is developed, matured, and enriched in all the younger candidates for human existence."

One reason for the success of the Cooperative Plan at Northeastern University is the "touch of life on life" which is made possible by the close association between more than 700 scholars on the faculty of the Basic Colleges and their students. When you enter Northeastern, you are assigned an academic adviser who works with you during your freshman year on a wide variety of problems concerning your personal and academic development. You are also given the opportunity for academic counseling throughout your upper-class years.



## Research

One of the fundamental purposes of a university is to discover new frontiers of human knowledge through basic research. This is of great importance in a university like Northeastern, which emphasizes preparation for graduate study.

Research projects totaling approximately \$6,000,000 yearly are being conducted in virtually all departments of all the Colleges, with support coming from the University, the Office of Education, the National Institutes of Health, the National Science Foundation, and many other government agencies and private industry. Nearly all programs employ either cooperative students or graduate fellows.

To show their diversity, a list of these projects would include fundamental studies in nuclear physics, mathematics, labor economics, solid-state theory, microelectronics, the effect of plasma on re-entry communications, cancer, biological applications of lasers, modification of visual threshold under hypnosis, and mathematical models describing metal alloys.

This research program helps Northeastern attract and retain the services of distinguished faculty members. You will be proud to know these men and women as professors in your classrooms.



## The Cooperative Plan

The Cooperative Plan brings relevance to your college education. By scheduling an alternating pattern between classwork and off-campus experiences, Northeastern helps you to develop personal maturity and realize your potential. The process itself—as you compare classroom theory with its realistic application—enlivens class work. Upon graduation, you will not only have a degree, but also a substantial amount of experience to offer a potential full-time employer. In addition, the money you earn on cooperative assignments will help to defray the cost of your tuition, books, and incidentals.

You will be assigned to a faculty coordinator who will be responsible for all phases of your cooperative program and will assist you in gaining maximum value from your education at Northeastern. Personal interviews, in which your academic progress and evaluations of your previous work experiences are reviewed, provide the basis for referral to specific opportunities that would help you realize your career objectives. Your coordinator is a specialist who keeps abreast of activities in specific areas of responsibility so that counseling on opportunities and trends in these areas can be provided. In general, starting assignments tend to be of a routine nature, to be followed by increasingly professional applications as your education and abilities increase. Subject to economic conditions and your willingness to consider alternative opportunities, you can expect to work on responsible and challenging assignments during participation in the program.

At some point in your program, you may wish to participate in an activity other than paid employment during a cooperative period. You may wish to travel abroad, spending time in one or several foreign countries learning about the customs, the culture, and the people. You may wish to volunteer your services to your local hospital or spend some time on an Indian reservation in the Southwest. Or you may wish to take specialized courses at another institution. Time to engage in these and similar activities can be arranged with your coordinator as a part of your cooperative education program.

Most cooperative curricula leading to the baccalaureate degree are five years in length. Programs consist of a freshman year of three consecutive quarters of full-time study followed by four upper-class years in which you will alternate periods of classroom attendance at Northeastern with periods on cooperative assignment. Some programs vary slightly from this pattern to meet professional requirements in their particular fields.

Associate degree programs in the College of Nursing and in Allied Health Professions require three years to complete, with two upper-class years "on co-op."

Participation in the Cooperative Plan is a requirement for all students in the Basic Colleges except those enrolled in the College of Liberal Arts. Liberal Arts students may elect a "full-time"

program in which eight quarters of upper-class study may be completed in three years. However, the majority of Liberal Arts students take advantage of the Cooperative Plan.

Further details on the cooperative program are available in a booklet entitled "Co-opportunities" which the Department of Admissions will be happy to send you on request.



## Alumni Association

More than 74,000 alumni of Northeastern are united under an all-University Alumni Association which has as its goals the promotion of the welfare of Northeastern University, the establishment of a mutually beneficial relationship between the University and its alumni, and the perpetuation of fellowship among members of the Association.

The Association is headquartered in the Office of Alumni Relations, Room 101 of the Carl S. Eli Student Center. The official records and addresses of alumni are maintained in the Office of Alumni Records, Room 260 of the United Realty Building.

The official publication of the Alumni Association, the *Northeastern Today-Alumni Edition*, published monthly except August and December, is sent to all alumni on record.

Activities of the Association, including the Homecoming celebration and the annual presentation of Professional Promise Awards to outstanding seniors in each of the Colleges, are directed by the Association through an extensive committee system. Alumni officers are also currently involved in establishing diverse continuing educational programs to meet the contemporary vocational and avocational needs of the Alumni Association.

Regional Alumni Clubs have been established from coast to coast. All alumni are eligible to become members of these organizations. The Alumni Clubs meet periodically with a varied program, often in conjunction with professional and athletic events, faculty visits, and service projects. Additionally, alumni class organizations conduct reunions for their respective classes every five years.

The Alumni Association has initiated a successful group travel program to provide the alumni of Northeastern with interesting, economical opportunities in foreign travel.

The Association sponsors and assists the various constituent organizations such as Sigma Epsilon Rho Honor Society, Varsity Club, Law, Pharmacy and Allied Health Sciences, Chemistry, Boston-Bouvé, MBA Association, and other special groups, all of which have their own officers and conduct various programs throughout the year. In cooperation with the Varsity Club, the Association presents trophies to the outstanding athlete of the year in each of the six major sports.

The Alumni Association provides a valuable service to the University and the community by sponsoring regional admissions conferences for high school students and the parents of those students who are interested in attending college. Alumni volunteers also serve the student body through programs of individual career counseling, welcoming international students and greeting students when they embark on a co-op assignment in an unfamiliar locale. In addition, alumni volunteers in many metropolitan areas across the nation represent the Admissions Office on a continuing basis at high schools and community colleges.

# PART II



# ACADEMIC PROGRAMS

## **ACADEMIC PROGRAMS**

### **Quarter-Hour Credits**

Northeastern University operates on a quarter system calendar. All courses are evaluated in terms of quarter-hour credit. A quarter-hour credit is equal to three-fourths of a semester hour credit.

**Classes at Northeastern University are scheduled in different modules.**

**In assessing quarter-hour weights for courses, the following statement applies.**

**One quarter-hour of credit is equal to 50 minutes of instruction per week, plus two hours of preparation.**

### **Tuition and Regulations**

Tuition rates, all fees, rules and regulations, courses and course content are subject to revision by the President and Board of Trustees at any time.

## **Boston-Bouvé College**

Paul M. Lepley, Ed.D., *Dean and Director of the  
Graduate School*

### **Professional Preparation**

After half a century of excellence as a college of physical education and physical therapy for women, Boston-Bouvé College merged with Northeastern University in July, 1964. From its very beginning in 1913, it stressed health education, recreation, winter sports, camping, and therapeutic exercise.

#### *Aims*

Today, Boston-Bouvé College of Northeastern University is coeducational with four undergraduate departments — Health Education, Physical Education, Physical Therapy, and Recreation Education. There are also two degrees at the graduate level, the Master of Science in Physical Education and the Master of Science in Recreation Education.

The primary goal of the College is to provide the very finest education for every student. To meet demands for fully qualified personnel in Health Education, Physical Education, Physical Therapy, and Recreation Education, the College seeks to develop the independent, self-reliant individual.

#### *A View of the Five-Year Program*

Professional preparation is based in the liberal arts and sciences, with orientation to each profession beginning in the freshman year. There is a concentration on specific essential skills spaced throughout the programs and on professional theory and practice in the last two years. In the junior or senior year, all students synthesize knowledge and skills through supervised experiences in clinical practice in Physical Therapy, student teaching in Physical Education, field experience in Recreation Education and student teaching or field experience in School and Community Health Education. Each curriculum is enriched by cooperative experiences which, for the most part, are related to a student's area of specialization. At times, co-op is professionally unrelated, but it is always concerned with people, thus providing an opportunity of inestimable value in any career.

### **Facilities**

The facilities of the College are quite diversified. Dockser Hall houses administrative and faculty offices, reading rooms, gymnasium, dance studio, physiology of exercise laboratory, classrooms, locker and shower facilities, as well as a community recreation laboratory, arts and crafts area, and seminar rooms. The swimming pool, weight room, handball courts, offices, shower and dressing facilities are located in the Barletta Natatorium complex. The Cabot building attached to Barletta contains one very large gymnasium, and another well-equipped for gymnastics, a rifle range, wrestling, boxing and weight machine rooms, an indoor athletic field, offices, and extensive locker space.



The Physical Therapy Department is located in Mary Gass Robinson Hall. On the third and fourth floors are the physical therapy faculty offices, a library, classrooms, and three laboratories. One of the laboratories is specially designed to simulate a modern physical therapy department and is well equipped for the practice of clinical procedures. In addition, there is the attractive Lupean Professional Library. This reading room maintains an up-to-date collection of physical therapy and medical books for use by students and faculty in the program and the College, and supplements the University's Library. These rooms are wired for closed circuit television to carry programs pertinent to the profession. This is also true of Dockser Hall.

The Warren Center serves as a practical laboratory for the College. Its athletic fields and tennis courts, natural setting of lake, woods, fields and streams, winterized cottages, and Hayden Lodge provide year-round opportunities for outdoor learning 25 miles from the Boston campus. Courses, conferences, seminars, and workshops are conducted at the Center throughout the year and thus serve University and community needs.

### **Admission**

See page 174 for statements concerning admission. Additional requirements basic to the admission of all prospective majors in the College include: good health, demonstrated ability to work with people, and the physical competence and skills to undertake the prescribed degree program. Full health clearance is required prior to matriculation at the University. In the third year, Physical Therapy students must be examined by either physicians in the University Health Services, at a moderate fee, or by a personal physician.

### **Graduation Requirements**

#### *Degrees*

Students graduating in Physical Education, Recreation Education, or Health Education earn the degree of Bachelor of Science in Education and students in Physical Therapy receive the degree of Bachelor of Science in Physical Therapy. These degrees are awarded to qualified candidates who have completed the curricula as prescribed. Student teaching, field experience or clinical practice is an integral part of the curriculum and is required for graduation.

### **Qualifications**

#### *Quantitative*

The quarter hours required in each curriculum differ.

	Q.H.
Health Education	172-175
Physical Education	172
Physical Therapy	169
Recreation Education	172

Students must meet the requirements of the Department of Cooperative Education before they become eligible for their degrees.

Senior year course work and required experiences must be completed in full-time residence at Northeastern University, or in an educational setting approved by the college.

#### *Qualitative*

The overall cumulative quality point averages required to enter each class level are explicitly stated in the Student Handbook. Throughout the professional sequence, students must maintain required averages



and demonstrate a high level of personal and professional maturity to continue field practice and be approved for graduation. Because of accreditation recommendations and differences in curricula, qualitative requirement variations may occur.

Transfer students in any curriculum may be accepted in the College at upper-class levels if there are available spaces. Each transcript is individually assessed for qualification, placement and course design.

### **Graduation with Honor**

Candidates who have attained superior grades in their academic work will be graduated with honor. Upon special vote of the faculty, a limited number of this group may be graduated with high honor or highest honor. Students must have been in attendance at the University at least six quarters before they become eligible for honors at graduation.

### **Accreditation**

Physical Therapy is accredited by the American Medical Association and the American Physical Therapy Association. Physical Education and Health Education are accredited by the National Council for Accreditation of Teacher Education and the Interstate Certification Compact/National Association of State Directors of Teacher Education and Certification. Outdoor Education is accredited by the National Council for Accreditation of Teacher Education.

### **Focus on the Student**

There is a uniqueness about Boston-Bouvé. Perhaps it is the personal touch, a keen interest in every young man and woman, expressed in individualized advice and counsel. The College has its own professional clubs and Dance Theatre. Its social clubs and exciting assemblies contrast with quiet study rooms, seminars, and places for research. There is skiing in winter, camping in summer, sports year-round.

Students from every class are elected to the Student Advisory Board, the most influential body in the College, which elects as officers a moderator, a secretary, and an historian. It is the Board that conducts assemblies, organizes career days, and makes recommendations to the Dean on improvements in the College. It also promotes an annual book drive for selected institutions in the United States, as well as professional schools in foreign countries, and sends representatives to a variety of University organizations.

Community service is stressed in every department—service to the retarded, the physically handicapped, inner-city youth, and the aging. Students at Boston Bouvé College are students who are concerned with people.

## **SCHOOL AND COMMUNITY HEALTH EDUCATION DEPARTMENT**

Paul M. Lepley, Ed.D., *Professor and Chairman*

Helen M. Garrity, Ed.D., *Professor and Executive Officer*

### **FACULTY    Adjunct Professor**

Elizabeth A. Neilson, Ed.D.

### **Assistant Professors**

Sally J. Sparks, M.S.

Margaret M. Zaremba, M.S.W.

### **Instructor**

Sheila G. McNeil, M.Ed.

### **Lecturer**

Allen B. Fleming, M.Ed.

## **Professional Preparation**

### *Aims*

Health Education is a teaching profession. It is concerned with teaching not only in elementary and secondary schools, colleges and universities, but also in community and continuing education centers and a diversity of agencies and institutions.

### *Description of Major*

The program of study is an integration of liberal arts and sciences concentrated in the first two years, with professional courses emphasized in the last three. Health Education courses, however, begin in the freshman year.

### *A View of the Five-Year Major*

Cooperative education offers alternate periods of work and study which enrich and facilitate learning and, of course, assist the student in financing his/her education. In the senior year, every major synthesizes theory and practice in student teaching in the schools or in field experience in centers, agencies, and institutions.

The way of life that an individual chooses in health matters will affect all that he does and becomes. The health educator teaches people about health concepts and health maintenance—how to solve personal or family health problems, to use health services, to become involved in the health of the community—with the goal of increasing individual potential for a full and useful life.

## **College and University Services**

The Department of Health Education conducts the required health courses for professional students in Physical Therapy, Physical Education and Recreation Education in Boston-Bouvé College and in the College of Pharmacy and Allied Health Professions. Electives in health are offered to all University students.

A wide range of courses is offered in such areas as human sexuality, drug use and abuse, mental health, and nutrition. They may be taken as University electives.

**Special Requirements**

All students in Health Education are required to have a full health examination prior to admission.

An appropriate activity uniform for Physical Education is required at a cost of approximately \$25.00

**Accreditation**

Health Education is accredited by the National Council for Accreditation of Teacher Education and the Interstate Certification Compact/National Association of State Directors of Teacher Education and Certification.

**Sample Freshman-Year Program of Studies in School and Community Health Education***First Quarter*

General Chemistry  
English  
Social Science  
Foundations Health Education  
Boston-Bouvé Elective

*Third Quarter*

Mathematics  
Biology  
English  
Health Problems of the School  
Child  
Physical Education

*Second Quarter*

General Chemistry  
Biology  
Social Science  
First Aid  
Instructional Resources  
Introduction to Safety

*In addition to the above courses, a student may elect to take Basic ROTC.*

**Basic Course Requirements****I. GENERAL (AND PROFESSIONALLY RELATED) REQUIREMENTS**

Course	Q.H.	Course	Q.H.
*General Chemistry	6	*Social Science	8
*English	8	**Human Development	8
*Biology	8	Measurement and Evaluation	4
Microbiology	4	Introduction to Special	
*Mathematics	4	Education	4
**Psychology	8	Humanistic Foundations	4
Anthropology	4	Physical Education	2-5
**Anatomy and Physiology	12	General Studies electives	20

*In accordance with NCATE recommendations on general studies, a student should take at least one course each in the symbolics of information, natural sciences, behavioral sciences, and the humanities (from among electives to fulfill requirements).*

**II. PROFESSIONAL REQUIREMENTS—TEACHING SPECIALTY**

Course	Q.H.	Course	Q.H.
*Foundations of Health Education	2	Evolving Patterns of Community Health	4
Human Sexuality/Family	4	Organization and Administration of School and Community Health Education	4
Drug Use and Abuse	4	*First Aid	2
Mental Health	4	*Instructional Resources	2
**Nutrition		*Health Problems, School Child	4
Seminar in Health Education	4	Concepts in Health, Aging, and Longevity	4
Health Counseling	4	Practicum in School Health	12
Teaching Procedures/Curriculum		Practicum in Community Health	12
Health Education for School and Community	4		
Communicable/Degenerative Diseases	4		
Introduction to Safety	2		

*\* These courses are usually taken in the Freshman year.*

*\*\* These courses taken in the Sophomore year are professionally related, Anatomy and Physiology, for example. Health concentration begins in the third year.*

## PHYSICAL EDUCATION DEPARTMENT

Carl S. Christensen, Ph.D., *Professor and Chairman*

### FACULTY Professors

John W. Fox, Ed.D.  
Kathryn Luttgens, Ph.D.  
Jeanne Rowlands, M.A.  
Richard C. Zobel, Ed.D.

### Associate Professors

Robert S. Curtin, Ed.D.  
Estelle M. Fotsch, Ph.D.  
William J. Gillespie, Ed.D.  
Kerkor Kassabian, Ed.M.  
Mary Nicholson, M.S.  
Harold A. Walker, A.B.

### Assistant Professors

Glenn A. Boden, M.Ed.  
Marilyn Cairns, M.S.  
Sandra Ann Hagen, M.F.A.  
Dorett M. Hope, M.S.  
Evelyn B. Howard, M.S.  
Marie Lintner, Ph.D.  
Hugh McCracken, Ph.D.  
Judith Noblitt, M.Ed.

### Instructors

Donna J. Cameron, M.S.  
Allan N. Sander, M.S.  
Diane E. Willcox, M.S.P.E.

### Professional Preparation

The Department of Physical Education conducts the undergraduate professional program for students majoring in Physical Education, electives for all University students, the intramural/club program for men and women, and Women's Intercollegiate Athletics.

### Aims

The professional program in Physical Education is designed to prepare specialists capable of developing the materials and methods appropriate to teaching physical education in public and private schools at all levels — elementary, secondary, and college. Its graduates are qualified as athletic coaches and/or trainers, physical education teachers, directors of athletics, supervisors of physical education, and leaders in YMCA and YWCA and other youth organizations.

### Description of Major

Students majoring in this program receive a strong background in general education and liberal arts. Elective hours are required in the areas of Science, Social Science, and Humanities. Courses in Physical Education include History, Philosophy, Principles, Curriculum Development and Class Procedures, Measurement and Evaluation, Kinesiology, Exercise Physiology, and Perceptual-Motor Development. Students are well grounded in the techniques of coaching the various individual, dual, and team sports, and in adapting these activities to the needs of the handicapped. Because of the close and overlapping relationship among the fields of Physical Education, Health, and Recreation, Physical Education majors may take courses in these areas.

Areas of emphasis include Athletic Training, Dance or the Foundation Sciences with concentration in the elementary school, secondary school, or generalist program. Class advisers are available to assist students as selections are made.

### **A View of the Five-Year Major**



The development and demonstration of personal skill in performance and teaching are an integral part of the professional program. Each student is expected to demonstrate a level of personal skill proficiency and knowledge competency in one activity for each of these areas: (I) Aquatics; (II) Dance; (III) Gymnastics; (IV) Racquet Sports; (V) Individual Activities; (VI) Fall and Winter Team Sports; (VII) Spring and Summer Team Sports. The degree of skill may be demonstrated through competency testing or by taking appropriate electives.\* Students will demonstrate, at the intermediate level, ability in one activity in six of the seven groupings; they must pass a beginning level course in one activity in one skill group. Major students are assigned supervised student teaching responsibilities in elementary and/or secondary schools throughout the Greater Boston area. In addition, students increase their experience with children through their cooperative work assignments and as counselors in summer camps.

Clothing appropriate for physical activity classes is required. Fees may be assessed in courses requiring highly specialized equipment, supplies, or off-campus facilities. In the spring quarter of the freshman year, there is a required one-week resident program at the Warren Center. An additional fee is charged for room and board.

*\* To qualify for beginning aquatics, dance, and gymnastics courses, Physical Education majors must demonstrate competence.*

### **Accreditation**

The professional program in Physical Education is accredited by the National Council for Accreditation for Teacher Education and the Interstate Certification Compact/National Association of State Directors of Teacher Education and Certification. Students who qualify may be certified by the National Athletic Trainers Association.

### **Electives in Physical Education**

A broad selection of electives in dance, sports, games, aquatics, and gymnastics is offered for all University students. All classes are open to men or to women with instructional modifications where appropriate.

Focus in the elective program is placed on the lifetime use of sports, dance, and aquatics for recreational satisfaction and participation. Classes are subject to cancellation if enrollments are too low.

### **Women's Intercollegiate Athletics**

The Women's Intercollegiate Athletic program has, as its prime purpose, the promotion of sports opportunities at the varsity and subvarsity levels for all undergraduate women students. Throughout the year, intercollegiate competition is available in basketball, field hockey, gymnastics, lacrosse, tennis, and volleyball.

### **Modern Dance Theatre and Jazz Dance Company**

The Northeastern University Modern Dance Theatre and Jazz Dance Company afford an opportunity to those students interested in dance as a performing art to choreograph and/or perform in concert. In addition to an annual concert production, these two groups present several lecture-demonstrations and/or concerts each year. Admission is by audition.

## Intramural and Extramural Sports

A comprehensive program of intramural and extramural sports is provided students through the media of clubs, leagues, and individual participation. Separate leagues are organized for commuters and dormitory and fraternity students. Intramural sports are organized for both men and women separately and on a coeducational basis in some activities. Throughout the year, intramural and club participation is possible in badminton, basketball, fencing, football, golf, gymnastics, modern and jazz dance, swimming, volleyball, and water polo. A "drop-in" program for individual leisure physical activity is also provided.

### Sample Freshman-Year Program of Studies in Physical Education

#### First Quarter

English I  
Biology I  
Social Science I  
Human Movement  
Prof. Skills Electives

#### Second Quarter

Math  
English II  
Biology II  
Social Science II  
Prof. Skills Electives

#### Third Quarter

Health Problems of  
The College Student  
Physical Science  
Group Dyn. Practicum  
Child Observation  
First Aid  
Prof. Skills Electives

*In addition to the above courses, a student may elect to take Basic ROTC.*

## Basic Course Requirements

### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*English I & II	8	**Human Devel. I & II	8
*Biology I & II	8	**Ed. Measurement	4
*Social Science I & II	8	*Math	4
*Health Problems of the College Student	3	General Electives	32

### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Human Movement	4	Kinesiology	4
Physical Science	3	Measurement and Evaluation	4
Group Dynamic and Practicum	4	Historical Priq./Phil.	4
*Child Observation	2	Exercise Physiology	4
*First Aid	2	Outdoor Teaching Lab.	2
**Anatomy and Physiology I & II	8	Elementary School Activities	4
Adapted PE	4	Athletic Training	3
Anatomy and Physiology III	4	Administration of PE	4
Perceptual and Motor Learning	3	Curricula Development	3
Critical Teaching Skills	3	Student Teaching	12
8 Prof. Skill Electives	8	8 Prof. Skills Analysis/ Coaching	8
Boston Bouvé Electives	11		

*\*These courses are usually taken in the freshman year.*

*\*\*These courses are usually taken in the sophomore year.*

## PHYSICAL THERAPY DEPARTMENT

Elizabeth J. Fellows, M.A., *Professor and Chairwoman*

### FACULTY

#### Professor

Elizabeth W. Van Slyck, M.A.

#### Visiting Professor

Whitney R. Powers, Ph.D.

#### Associate Professors

Pauline A. Cerasoli, M.S.

Ruth P. Hall, B.S.

#### Instructors

Carole C. Burnett, M.Ed.

Theresa A. Cimini, B.S.

Maureen K. Holden, B.S.

Mary Slavin, B.S.

#### Assistant Professors

Nancy Cardinali, M.S.

Janice L. Foster, M.S.

Betty G. Garman, M.P.H.

Cheryl L. Riegger, M.S.

### Professional Preparation

#### *Aims*

The Department of Physical Therapy is dedicated to the preparation of therapists who can provide services of the highest quality in a time of changing concepts, new trends, and new challenges. Students will not only acquire the skill to help a patient gain functional independence, but learn to recognize and assist with emotional and socio-economic problems that affect recovery.

#### *Description of Major*

Physical Therapy is one of the health professions contributing to the delivery of comprehensive medical care. The physical therapist is highly skilled in evaluation procedures and in the planning and execution of treatment programs appropriate to the condition or disabilities of a patient. In addition, the responsibilities may include health care planning and community service. The qualified physical therapist administers physical therapy only upon referral by a physician.

Positions are available in general hospitals, children's hospitals, university hospitals, rehabilitation centers, schools or centers for crippled children, nursing homes, extended care facilities, and community, state, and governmental agencies. In addition, there are increasing opportunities in teaching and research in physical therapy.

#### *A View of the Five-Year Major*

The five-year program in Physical Therapy, based on the Cooperative Plan, is unique in physical therapy education.

The program of study is an integration of liberal arts and sciences and professional courses, with major emphasis on liberal arts in the first two years of the program and on professional preparation in the last three years. The professional courses include such subjects as Anatomy, Kinesiology, Pathology, Clinical Medicine, Neurology, Orthopedics, Physiology, Physical Therapy Procedures, Administration, and practical experience in various hospitals and clinics.



Lecturers from Tufts University School of Medicine and the New England Medical Center Hospitals, as well as from many medical and social agencies in the Boston area, augment the professional staff in the Physical Therapy program.

Supervised clinical education is a strong component of the curriculum and a requirement for graduation. Clinical experience provides the student with opportunities to practice various phases of physical therapy under supervision in preparation for assuming the role of a qualified physical therapist. Assignments in clinical education are not confined to the Boston area. They may include physical therapy departments throughout the country, particularly in many states along the eastern seaboard.

Students admitted to the Department of Physical Therapy must maintain acceptable standards of scholarship and performance in the prescribed program. They must also demonstrate adequate health, verbal fluency, essential motor skills, and emotional maturity; they must complete all required courses and have a favorable evaluation from clinical practice and co-op experience.

To continue in the program, students are required to attain and maintain a grade of C or better in professional courses. They must also demonstrate personal and professional maturity throughout the professional sequence to be recommended for graduation and placement. Students completing the prescribed curriculum are eligible to take state examinations for registration.

### *Uniforms*

Women may wear the required gymnasium uniform for Physical Therapy laboratory classes beginning in the freshman year. Men wear navy blue shorts and white T-shirts for these classes.

Students are required to purchase uniforms and accessories prior to Supervised Clinical Education. The cost of clinic uniforms is approximately \$85.

### *Clinical Education*

Students on clinical education assignments should plan on additional expenses, including travel.

### **Accreditation**

The program is approved by the American Medical Association and the American Physical Therapy Association.

### **Sample Freshman-Year Program of Studies in Physical Therapy**

#### *First Quarter*

Fundamentals of Mathematics  
Basic Animal Biology  
English  
First Aid

#### *Third Quarter*

General Chemistry  
Basic Animal Biology  
Foundations of Psychology I  
Health Education

#### *Second Quarter*

Fundamentals of Mathematics  
General Chemistry  
English  
Introduction to Physical Therapy

*In addition to the above courses, a student may elect to take Basic ROTC.*





## Basic Course Requirements

### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Fundamentals of Mathematics	8	**Basic Physics	9
*Basic Animal Biology	8	**Human Physiology	8
*English	8	**Human Anatomy	4
*General Chemistry	10	*Foundations of Psychology I	4
*Health Education	3	4 General Electives	16
First Aid	2	**Foundations of Psychology II	4

### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Introduction to Physical Therapy	2	Advanced Therapeutic Exercise	4
**Introduction to Physical Therapy	2	Neuroanatomy	3
**Perceptual and Motor Learning	3	Integration of Therapeutic Exercise	2
Gross Anatomy	6	Electrical Testing and Treatment Procedures	2
Physiology Related to Physical Therapy	3	Research Design	4
Massage	2	Psychosocial Aspects of Illness	3
Pathology	3	Rehabilitation	3
Clinical Medicine I, II, III	8	Supervised Clinical Education	5
Clinical Psychiatry	2	Clinical Seminar	3
Applied Anatomy	4	Administration	3
Basic Therapeutic Exercise	4	Investigative Studies	6
Evaluation Procedures	3		
Prosthetics/Orthotics and Functional Activities	4		
Management of Medical/Surgical Respiratory Disorders	2		

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.

## RECREATION EDUCATION DEPARTMENT

Albert H. McCay, Ed.D., *Professor, Chairman and Director of the Warren Center*

### FACULTY

#### Associate Professors

Elaine Eliopoulos, M.S.  
Peter Graham, Ed.D.  
Richard B. Morrison, Ed.D.  
Frank Robinson, M.S.  
Alae-Eldin Sayed, Ed.D.

#### Instructor

George Atkinson, M.S.

#### Lecturer

Janet Swanson, M.S.

#### Assistant Professors

Sylvia Dawson, M.S.  
Robert C. Hayes, Ed.D.

### Professional Preparation

#### *Aims*

Recreation Education is a vital profession for a rapidly changing world. Prospects for the future clearly point toward an increase in leisure time and more income available for it. Public recognition of the need for trained administrators in this area, for people of all ages during all seasons of the year, has created new demands for career personnel.

#### *Description of Major*

Government agencies and educational institutions are expanding their programs. Recreation opportunities exist in community organizations, schools, business, and industry; in the Red Cross, Peace Corps, and Armed Forces; in camps, resorts, and parks; in departments of recreation in schools and colleges; in new recreation centers developed by youth groups; and in state, regional, and national parks.

#### *A View of the Five-Year Major*

The cooperative program of study is based in the liberal arts and sciences, with courses in professional education beginning in the freshman year.

The acquisition of knowledge and skills in arts and crafts, camping, dramatics, music, sports, dance, aquatics, hobbies, and therapeutic recreation for special groups is combined with training in leadership, organization, and administration.

Outdoor education, camp counseling, school camping, recreation, and park programming are essential aspects of the curriculum, and the Warren Center of Northeastern University offers an excellent and unique teaching-learning laboratory within easy commuting distance of Boston.

Supervised Field Experience, indoors and outdoors, provides both exciting and practical opportunities to work with children, youth, and adults. In addition, the Cooperative Plan offers seven quarters of practical, on-the-job experience in youth agencies, municipal recreation departments, hospitals and institutions, homes for the aging, and other selected settings.

Undergraduates in the Department of Recreation Education may select any one of three emphases: Community Recreation Education; Therapeutic Recreation for work with the retarded, the handicapped and the aging; or Outdoor Recreation/Education and Conservation.

### Special Requirements

Students are scheduled for their one-week resident camp experience at the end of the freshman year at the Warren Center in Ashland, approximately 25 miles west of the Boston Campus. The student cost for this experience is approximately \$90.00

During the winter quarter of the junior or senior year, a week is scheduled for ski and winter sports instruction as an elective. The student cost is approximately \$90.00-\$100.00.

There is no required uniform for Recreation Education students in activity courses.

### Accreditation

The Professional Program in Outdoor Education is accredited by the National Council for Accreditation of Teacher Education (NCATE).

### Sample Freshman-Year Program of Studies in Recreation Education

#### First Quarter

English  
Speech Fundamentals  
Social Science  
Orientation to Recreation  
Recreation Skills

#### Third Quarter

Basic Biology  
Health Education  
Social Science  
Recreation Skills

#### Second Quarter

Basic Biology  
English  
Social Science  
Recreation Skills

#### Third Quarter A

Outdoor Education and  
Camp Leadership

*In addition to the above courses a student may elect to take Basic ROTC.*

### Basic Course Requirements

#### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
Biology	8	Earth Science electives	8
English	8	Workshop Drama	4
Social Science	12		
Speech Fundamentals	3		
Health Education	3		
Human Development	8		

#### II. PROFESSIONAL REQUIREMENTS AND PROFESSIONAL ELECTIVES

Course	Q.H.	Course	Q.H.
Recreation Budgeting and Finance	3	*Recreation Skills	19
*Supervised Field Work	16	*Orientation to Recreation	1
*Research and Readings	4	*Camp Leadership	4
Camp Administration	3	*Anatomy and Physiology	6
Recreation Activities for the Atypical	3	Outdoor Education	3
Philosophy of Recreation	3	Introduction to Therapeutic Recreation	3
*Senior Seminar	4	Educational Resources	3
Outdoor Education for the Handicapped	3	Outdoor Education II	3
School Camping	3	*Survey of Outdoor Facilities	3
Workshop in Adaptives	3	*Group Dynamics	3
Community Schools	3	Methods and Materials	3
Psychological Aspects of Disabilities	4	Administration of Recreation and Parks	4
Analysis of Movement as Applied to Recreation	4	Int. to Community Recreation	4
<i>Others-See catalog listings</i>	—	Int. to Outdoor Education	3

*\*Professional requirements*

## College of Business Administration

Geoffrey P.E. Clarkson, Ph.D., *Dean*

Philip T. Crotty, M.B.A., Ed.D., *Associate Dean*

John W. Jordan, M.S., *Associate Dean and Director, Graduate School of Business Administration*

Dennis Ramsier, *Assistant to the Dean*

### FACULTY ACCOUNTING GROUP

#### Professors

Carlo E. Gubellini, M.B.A.,  
Faculty Coordinator

Joseph M. Golemme, M.A.,  
C.P.A., Harold A. Mock  
Professor of Accounting

Henry A. Kriebel, Ph.D., (Visiting)  
Lawrence H. Malchman, Ed.M.,  
C.P.A.

#### Associate Professors

Joseph R. Curran, Ph.D.  
Paul A. Janell, Ph.D.  
Richard Lindhe, Ph.D.  
James B. McNamara,  
Ph.D. Candidate

#### Assistant Professors

Marleen M. Izumi, Ph.D.  
Sitikantha Mahapatra, Ph.D.

### FINANCE GROUP

#### Professors

Wesley W. Marple, Jr., D.B.A.,  
Faculty Coordinator  
Elliott L. Atamian, D.B.A.  
Anghel N. Rugina, Ph.D.  
Edward R. Willett, Ph.D.

#### Associate Professors

Lal. C. Chugh, Ph.D.  
Robert J. Hehre, D.B.A., C.P.A.  
Timothy Sullivan, Ph.D.  
Jonathan B. Welch, Ph.D.

#### Assistant Professors

Michael A. Lenarcic,  
Ph.D. Candidate  
Paul M. Morris, Ph.D. Candidate  
Donald M. Pattillo, Ph.D.

### GENERAL MANAGEMENT GROUP

#### Professors

Lyman A. Keith, M.B.A.  
Russell W. Olive, D.B.A., P.E.

#### Associate Professors

Angelo J. Fiumara, J.D.  
Victor B. Godin, D.B.A., P.E.  
Robert C. Lieb, D.B.A.  
Carl W. Nelson, Ph.D.  
Robert A. Parsons, Ph.D. Candidate.  
Ashok Rao, Ph.D.  
Daniel C. Scioletti, J.D.

#### Assistant Professors

Donald J. Agostino, Ph.D.  
Steven E. Eriksen, Ph.D. Candidate  
Stavros S. Frantzis, Ph.D.  
John F. King, Ph.D. Candidate  
Raymond M. Kinnunen, D.B.A.  
Paul M. Morris, Ph.D. Candidate  
Charles Shelley, Ph.D.  
Frederick J. Stephenson, Ph.D.  
Branch K. Sternal, Ph.D.

### HUMAN RESOURCES GROUP

#### Professors

Richard B. Higgins, Ph.D.  
Faculty Coordinator  
Daniel J. McCarthy, D.B.A.

#### Associate Professors

Christine L. Hobart, D.B.A.  
Andre P. Priem, M.A.  
Jeffry A. Timmons, D.B.A.  
Edward G. Wertheim, Ph.D.

#### Assistant Professors

Matthew D. Arnett, Ph.D.  
J. Lawrence French, Ph.D.  
Herbert G. Graetz, D.B.A.

Timm L. Kainen, Ph.D. Candidate  
Francis C. Spital, Ph.D. Candidate  
Rudolph Winston, Jr., D.B.A.

**Associate Professor**  
Frederick Wiseman, Ph.D.

**MARKETING GROUP**

**Assistant Professors**  
Dan T. Dunn, Jr., D.B.A.  
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**Professors**

Charles J. Collazzo, Jr., Ph.D.  
Philip R. McDonald, D.B.A.  
Robert J. Minichiello, D.B.A.  
Jehiel Zif, Ph.D., (Visiting)

**Professional Preparation**



The College of Business Administration offers concentrations in the principal fields of business: Accounting, Entrepreneurship and New Venture Management (Small Business Management), Finance and Insurance, Human Resources, International Business, Management, Marketing, and Transportation. There is also a General Business concentration for those students who wish to select courses from several of the above subject areas.

These programs prepare men and women for positions of administrative responsibility in business, government, and other organizations. Their goal is to develop the ability to recognize and solve problems and to understand the scope of the business firm in community, national, and international relations.

In developing these skills, the student gains a broad understanding of business and organizational problems through specialized courses, as well as firsthand knowledge of effective solutions. From 40 to 60 percent of the course work in the College of Business Administration concentrations is centered in the arts and sciences to insure a liberal education.

All concentrations are offered on the five-year Cooperative Plan, providing students with substantial practical experience in the fields for which they are preparing.

**Aims**

In keeping with the current trends in collegiate education, the educational aims of the College are:

1. To develop attitudes and ideals that are ethically sound and socially desirable;
2. To cultivate an appreciation of the social, political, and economic developments to which the business firm must adjust and adapt;
3. To develop the habits of accurate thinking that are essential to sound judgment and the habits of accurate expression that are essential to effective communication;
4. To provide an opportunity for the student to develop a specialization in business in accordance with his interests and talents.

### *A View of the Five-Year Program*

The upper-class program of study assimilates the practice of modern business management and administration with elective courses in liberal arts and other nonbusiness areas.

A concentration in Accounting will prepare students for professional public accounting, as well as for positions in private industry or governmental service. The concentration in Entrepreneurship and New Venture Management, Finance and Insurance, Human Resources, International Business, Management, Marketing, or Transportation, when combined with the experiences gained in both business and nonbusiness organizations on cooperative work assignments, will give students the experience and educational background for almost any type of administrative position for which their interests and abilities qualify them.

The business training and experiences during cooperative work periods will be most important factors in helping students determine the specific type of work and kind of organization with which they would like to be associated after graduation.

As a graduate of the College of Business Administration, you may see fit to continue your formal education on the graduate level. Such advanced study will extend your professional and research abilities so that you may better serve employers in business and industry. It will also prepare you for a career in college-level teaching.

If you plan to continue your formal education by enrolling in a law school after graduation, you will find that the undergraduate program in the College of Business Administration provides an excellent foundation. Many careers in law are directly involved in the business world, either in large corporations or in private practice. The College's curriculum provides you with a broad understanding of the business environment, as well as specific skills in the problems of operating a business in today's social and legal environment.

While the Association of American Law Schools does not recommend particular courses or curricula for prelegal students, it does advise that undergraduates build skills in comprehension and oral expression and develop critical understanding of the institutions and values with which the law deals.

The flexibility and liberal arts content of the College of Business Administration curriculum allows a student to fulfill these requirements and, at the same time, to acquire a specialized skill in and knowledge of the field of business management.

The College uses the problem and the case methods of instruction in addition to the lecture and recitation system. For the most part, in-



introductory and basic tool courses are presented on a lecture-problem basis. A large portion of the classwork of the upper-class years consists of discussion, analysis, and reports on specific business problems and cases. Students are encouraged to analyze propositions, to challenge unsupported assertions, to think independently, and to support their thinking with logic and facts. Frequent verbal presentations and written reports are required. To facilitate the case method of instruction, there are special classrooms designed for the College.

### **Graduation Requirements**

Students may qualify for the degree of Bachelor of Science in Business Administration in one of the following areas of concentration: Accounting, Entrepreneurship and New Venture Management, Finance and Insurance, Human Resources, International Business, Management, Marketing, Transportation, or General Business.

Candidates for the Bachelor of Science degree must complete all of the prescribed work of the curriculum in which they seek to qualify. This presently totals 176 quarter hours of credit. The degree conferred not only represents the formal completion of the subjects in the selected courses of study, but also indicates professional competence in the designated area of concentration. An overall average grade of C is required for graduation.

A student must be enrolled in a full program of studies at Northeastern University during the final three quarters immediately preceding graduation.

### **Graduation with Honors**

Candidates who have achieved superior grades in their academic work will be graduated with honor. Upon special vote of the faculty, a limited number of this group may be graduated with high honor or with highest honor. Students must have been in attendance at the University at least six quarters before they can become eligible for honors at graduation.

### **Accreditation**

The Undergraduate Program of the College of Business Administration is fully accredited by the American Assembly of Collegiate Schools of Business.

The Sample Freshman-Year Program of Studies and the General Requirements for the College of Business Administration are the same for all the concentration areas.

### **Sample Freshman-Year Program of Studies in the College of Business Administration**

<i>First Quarter</i>	<i>Third Quarter</i>
Introduction to Business	Accounting II
Math I	English II
Liberal Arts Elective	Liberal Arts Elective
Economics I	Economics II
<i>Second Quarter</i>	
Accounting I	
Math II	
English I	
Liberal Arts Elective	

*Students who will complete the Reserve Officer Training Course are permitted to drop one elective each quarter of their Senior year.*

*The College of Business Administration has no physical education requirement. Students wishing to take courses in physical education may take a maximum of eight (8) quarter hours as elective credits.*

**Basic Course Requirements****I. GENERAL REQUIREMENTS**

Course	QH	Course	QH
*Math I & II	8	Introduction to Marketing	4
*English I & II	8	**Quantitative Methods I & II	8
*Introduction to Business	4	Organizational Behavior I & II	8
*Accounting I & II	8	Business and Society	4
*Economics MACRO	4	Business Policy	4
*Economics MICRO	4	Nonbusiness Electives	48
Introduction to Financial Activity	4		

*\*These courses are usually taken in the Freshman year.*

*\*\*This course is usually taken in the Sophomore year.*



## ACCOUNTING CONCENTRATION

### Professional Preparation

#### *Aims*

If you are anticipating a career in accounting, your interests probably lie within one of its two major areas: industrial accounting and public accounting. To provide you with the professional competence necessary to enter these fields, the College of Business Administration offers a variety of financial accounting and managerial accounting courses.

Preparation for a career in accounting encompasses a broad range of activities. These include all phases of record-keeping, internal and external reporting, financial planning, cost control, the design and installation of systems and procedures, the application of electronic and other modern business methods to these activities, and managerial decision-making.



Accounting is a fast-growing and critical area of business. It is an exacting field which requires men and women who enjoy dealing with facts and figures as well as with people. It requires accuracy and an ability to reason and to interpret business data.

#### *A View of the Five-Year Concentration*

During your first year, you will develop communicative and analytical abilities, gain an understanding of the nature of accounting, and survey business as a dynamic institution in an economic setting. Another important activity will be consultation with your coordinator from the Department of Cooperative Education about future work assignments.

Subjects in your third year will include courses in the various functional areas of business (marketing, finance, production, personnel), statistical analyses, and economic activity.

Whether your choice of employment is in the industrial accounting or public accounting area, you will study specialized courses in the third and subsequent years to equip you for your choice. Subjects will include Cost Accounting, Accounting Theory, Planning and Control, Auditing, and Taxes.

The sample Freshman-Year Program of Studies and the General Requirements for the College of Business Administration are the same for all the concentration areas. In addition to these common requirements, the following accounting core courses are required of students who concentrate in accounting:

Course	Q.H.
Accounting Principles III	4
Intermediate Accounting I & II	8
Cost Accounting	4
Accounting Theory and Practice or Accounting Planning and Control	4
Business Electives	8
Accounting Elective	4
Open Electives	32

## ENTREPRENEURSHIP AND NEW VENTURE MANAGEMENT CONCENTRATION

### Professional Preparation

#### *Aims*

The concentration in Entrepreneurship and New Venture Management (Small Business Management) provides students who plan to operate their own businesses with an opportunity to develop skills necessary for the effective management of small enterprises.

#### *Description of Concentration*

Have you ever thought about starting, acquiring, and operating your own small business? Will you be faced with an opportunity to join a family business upon graduation? Have your views of or experience with large corporations made you think about life in a smaller organization? Or do you think you would get a real kick out of working for a small company and want to learn more about opportunities with smaller firms?

Are you considering a career in sales management, banking, public accounting, management consulting, or other areas which may involve you directly with owners and managers of new and small companies? For example, a bank loan officer, sales manager, or CPA would often have many entrepreneurs and small company officers as clients.

If your answer was yes to any of these questions, then you are probably a member of a unique and growing portion of Northeastern students and young people everywhere whose career definition of "doing your own thing" encompasses self-employment or work in a smaller company or other organization.

A concentration in this field will provide you with a thorough "start-to-finish" perspective. The concentration provides courses which deal with each of these key questions:

1. What are the characteristics of people who start their own companies, and what does it take to start and build a new business?
2. What are some key sources of business opportunities, and how does one assess feasibility of a particular venture?
3. What sources exist for raising seed capital, and how does one acquire it?
4. What are the critical problems and opportunities in managing successfully a smaller company, and what managerial methods are appropriate to deal with these?
5. What are the key issues in financing and managing an ongoing, growing venture, and how can these be applied to small ventures?



*A View of the  
Five-Year Concentration*

Courses in this concentration benefit students in several ways. They will develop the ability to assess personal aptitude and potential for small business, to find and evaluate business opportunities, to secure adequate funding, and to organize and manage the various facets of the small business—marketing, finance and control, and personnel.

Entrepreneurship and New Venture Management presents students with the opportunity to prepare for a career in which they can be involved in the management of business while maintaining a significant degree of autonomy and independence.

Some students will enter this career at graduation or sometimes even before it. However, many find that they first obtain experience through their cooperative work and postgraduate employment prior to establishing their own enterprises.

The Sample Freshman-Year Program of Studies and the General Requirements for the College of Business Administration are the same for all the concentration areas. See pages 51 and 52.

## II. PROFESSIONAL REQUIREMENTS

Course	Q.H.
New Venture Creation	4
Opportunity Analysis & Venture Capital	4
Small Business Finance	4
Small Business Management	4

Course	Q.H.
Business Electives	12
Open Electives	32



## FINANCE AND INSURANCE CONCENTRATION

### Professional Preparation

#### *Aims*

The objective of the Finance and Insurance Concentration is to train students for the financial management of businesses, nonprofit organizations, and governmental units. Preparation is two-fold: students receive *information* about current practices, theories, and concepts of financial management and gain *experience* in analyzing situations that require financial decisions.

#### *Description of Concentration*

Almost every phase of economic activity involves aspects of financial management—of cash or other funds, and of economic resources available to the individual, the business, or other economic unit.

Perhaps you can visualize your future career in one of the many areas of funds management: security analysis, estate planning, corporate finance and control, financial planning, security or insurance brokerage, underwriting, credit management, and banking. If so, you should consider the Finance and Insurance Concentration.

There are also career opportunities in specific financial institutions which perform indispensable services for present-day business and industry. Among them are banks, insurance companies, investment houses, credit concerns, financial service institutions, mortgage companies, and national and local real estate brokerage firms and appraisers.

Career possibilities exist in all areas of business, industry, and government, where financial planning and operation are vital.

*A View of the  
Five-Year Concentration*

As a middler, you study Introduction to Finance and beginning courses in other business fields. Specialization occurs in your upper-class years as you take advanced courses in insurance, investments, security markets, and basic business finance. To provide you with a well-rounded education, other courses are available, particularly in the broad area of economics.

Following the introductory course, your courses are Managerial Finance I and II, Investment Management, and Money and Economic Activity. In addition to these required courses, many electives are available. Examples of these electives are: Advanced Managerial Finance, Financial Analysis, Management of Financial Institutions, and Insurance. Independent Study is always an appropriate elective.

All courses which the Department of Finance and Insurance offers are open to students in any concentration who have taken the prerequisite subjects. Instructors may waive prerequisite courses in special circumstances. However, not all courses are offered every year because of staffing constraints.

A. MANAGERIAL FINANCE,  
subfield

There are two objectives of the finance function in the contemporary corporation or business entity:

1. To provide needed funds on terms that are the most favorable in view of current planning;
2. To regulate the flow of funds so as to maximize the realization of objectives.

The key concerns of financial management are the capital structure of the business and the optimal manner in which its assets should be held. With only minor differences, these same broad objectives apply to the finance function of nonprofit organizations, including those in the public sector (units of government).

B. MANAGEMENT OF  
FINANCIAL  
INSTITUTIONS, subfield

The area of specialization is broadly based within the subject area and is applicable to a variety of financial institutions and positions within them.

The three major topical considerations of the area of specialization are:

1. The institutional structure of the financial system and the relationship between it and the surplus and deficit units of the whole economy;
2. Asset, liability, and capital management problems of financial intermediaries;
3. Investment analysis and portfolio management policies appropriate to different financial intermediaries.

C. INVESTMENT AND  
MANAGEMENT  
ANALYSIS, subfield

There are two benefits of studying this concentration. First, the general understanding which students gain will help them manage

their own affairs. Second, it will assist those seeking professional careers in organizations where the investment function is paramount: industrial and utility corporations, real estate developments, financial institutions, and many governmental agencies.

The specialized skills and principles which students develop in the concentration should benefit them if they seek careers as investment managers or security analysts in the following organizations:

1. Stock exchanges, investment advisory firms, brokers-dealers, underwriters, mutual funds, and other investment companies which are a part of the securities markets;
2. Insurance companies, commercial banks, savings and loan associations, trust companies, mutual savings associations, pension funds, and organizations involved in the activities of the securities markets; or
3. Federal and state governmental agencies such as the SEC, FDIC, Treasury Department, IRS, and others having regulatory responsibilities regarding the securities markets and their participants.

#### **D. INSURANCE AND RISK MANAGEMENT, subfield**

The insurance concentration is divided principally between the insurance needs of individuals and businesses covering a wide variety of risks. The basic elements are designed to reduce existing risks and to establish frameworks within which future risks and uncertainties can be analyzed and managed.

The Sample Freshman-Year Program of Studies and the General Requirements for the College of Business Administration are the same for all the concentration areas. See pages 51, 52.

#### **II. PROFESSIONAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
Financial Management I	4	Finance Electives	8
Financial Management II	4	Business Elective	4
Money and Economic Activity	4	Open Electives	32
Investment Management	4		

## **HUMAN RESOURCES MANAGEMENT CONCENTRATION**

### **Professional Preparation**

#### *Aims*

Human resources management, which focuses on the effective utilization of people at work, is an extension of personnel and labor relations but includes more than the traditional areas of recruitment, selection, compensation, and training. A human resources manager must also be knowledgeable about manpower planning, equal employment opportunity laws and affirmative action procedure, organizational development, career planning, job design and motivation, leadership, and communications. The ultimate goal is to provide an organization with the people who will be most effective in their jobs.

### *Description of Concentration*



In recent years there has been a growing interest in the quality of the employee's work life and the efficient production of goods and services. Companies such as Proctor and Gamble, AT&T, General Motors, and Burlington Mills, as well as a growing number of organizations in the public sector, are paying more and more attention to the quality of human performance at work and the level of human contributions to output. At a time when financial resources and investment capital are becoming scarcer, many organizations are beginning to take a closer look at the management of their people as their most precious resource. In recognition of the growing importance of this field and the increasing need for qualified people to staff it, Northeastern University's College of Business Administration offers an undergraduate concentration in Human Resources Management.

The effective management of human resources calls for a joint partnership between organizational specialists such as personnel administrators, labor relations negotiators, wage and salary analysts, and operating line managers in the various functional areas (marketing, finance, production) of the company. As the traditional role of personnel administration is expanded to include affirmative action programs, job enrichment, and organizational development activities, career opportunities in the fields of labor relations and personnel administration will continue to expand in both the public and private sectors.

For the student whose career aspirations lie in fields other than personnel and labor relations, one important point should be made: Human resources management is not a specialized activity confined to the personnel department. Whether you start your career as a work-flow analyst in manufacturing, a customer service assistant in marketing, as a field auditor in the accounting department, or a hospital unit manager, you will be required to demonstrate skills in working with individuals and groups to achieve desired results.

### *A View of the Five-Year Concentration*

Because human resources management is practiced not only by specialists in the area of personnel and labor relations, but also by line managers and specialists in many other business areas, we have structured the Human Resources Management Concentration to provide two alternative paths for the student:

#### **Human Resources Management Option #1**

Consists of courses focusing on the areas of personnel and labor relations:

##### *1. 3 required courses*

People and Productivity  
Personnel Administration  
Contemporary Labor Issues

##### *2. 3 electives from the following:*

Organization Structure & Process  
Managerial Skills Seminar  
Seminar in Collective Bargaining  
Reward Systems  
Labor Law  
Labor Economics  
Assessment of Prospective Employees  
Career Planning and Managerial Skill Assessment

**Human Resources Management Option #2**

Consists of a more generalized set of Human Resources Management courses appropriate to any prospective manager and/or specialist in any functional area of the business whose job will require interaction with other people to achieve desired results:

**1. 3 required courses**

People and Productivity  
Organization Structure and Process  
Managerial Skills Seminar

**2. 3 electives from the following:**

Personnel Administration  
Contemporary Labor Issues  
Interpersonal Effectiveness and Small Group Management  
Motivation and Control  
Strategies of Organizational Change  
Interpersonal Relations through Transactional Analysis  
Career Planning and Managerial Skill Assessment  
Dynamics and Practice of Superior/Subordinate Relations  
Assessment of Prospective Employees

The dual-option structure of the Human Resources Management Concentration is designed to achieve several purposes:

1. To provide students who choose to specialize in personnel and labor relations with a wider array of courses.
2. To provide students who wish to explore both the specialized and the more generalized aspects of human resources management with the opportunity to do so. In this case, students would be strongly encouraged to select courses from both Option #1 and Option #2.
3. To provide other concentrators (Marketing, Finance, etc.) with the opportunity to develop generalized expertise and skill in human resources management. In this case, Option #2 would be encouraged as a "second concentration."

**II. PROFESSIONAL REQUIREMENTS**

1. Human Resources Management (Option #1)		2. Human Resources Management (Option #2)	
Course	Q.H.	Course	Q.H.
People and Productivity	4	People and Productivity	4
Personnel Administration	4	Organization Structure and Process	4
Contemporary Labor Issues	4	Managerial Skills Seminar	4
Human Resources Management Electives	12	Human Resources Management Electives	12
Business Elective	4	Business Electives	4
Open Electives	32	Open Electives	32

## **INTERNATIONAL BUSINESS CONCENTRATION**

### **Professional Preparation**

#### *Aims*

In recent years, several factors have contributed to a rapidly increasing need for qualified people in the field of international business. The growth of multinational firms, international trade, and regional international trading blocs has created a shortage of skilled managers who are equipped to analyze the complexities of international business problems.

The International Business Administration Concentration prepares students to meet these management needs. It develops an understanding of problems involved in operating business enterprises across national boundaries and an ability to analyze the operations of businesses in multinational environments.

The curriculum consists of the following:

1. A broad education provided by liberal arts course requirements.
2. A basic business education provided by business administration core requirements.
3. A specialized education in International Business.

#### *Description of Concentration*

The International Business Concentration consists of six courses. Two of them are required: Introduction to International Business and Seminar in International Business. There are also four electives: two from the International Business curriculum and two from the Liberal Arts Electives (See page 61.)

When you enroll in the International Business Concentration, you will find that its structure is most flexible, permitting you to have a dual concentration. For example, you may concentrate in International Business and use open electives to fulfill the requirement of a second concentration. The dual concentration is recommended, given that employment opportunities in the international business activities of an organization are in a traditional, functional area, as for example, production, marketing, or finance. All College of Business Administration courses which are offered as part of the International Business Administration Concentration are available to students in other concentrations during their middler, junior, and senior years.

#### *A View of the Five-Year Concentration*

Careers in international business are available in most companies which carry on trade or manufacturing operations in foreign countries. An increasing number of multinational firms require that candidates for their top management positions have prior experience in international operations. In addition, large banks and insurance companies need managers who understand international business. Government, trade associations, and large unions also need people with international business skill, and the opportunity for foreign travel in any of these capacities is frequently available.

Students who choose this concentration gain an understanding of



the economic, political, and social constraints on international business. They also develop skills in analyzing the financial, marketing, and operational strategies of the multinational firm.

Liberal arts electives such as modern languages, political science, international economics, geography, and cultural anthropology—all appropriate to the understanding of international relations—are highly recommended to complement this concentration.

The Sample Freshman-Year Program of Studies and the General Requirements for the College of Business Administration are the same for all the concentration areas. See pages 51 and 52.

## II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
Introduction to		Business Electives	12
International Business	4	Open Electives	32
Seminar in International Business	4		
Business Administration			
Electives (International List)	8		
Liberal Arts Electives			
(International List)	8		

### **International Business Administration Electives**

#### *International Business Administration—College of Business Administration Electives*

International Accounting  
 Comparative International Management  
 International Financial Management  
 International Marketing  
 International Transportation and Distribution Management

#### *International Business Administration—Liberal Arts Electives*

Language and Culture  
 Individual and Culture  
 Evolution and Society  
 Culture in Transition  
 Economic Anthropology  
 Culture and Change  
 Social Change  
 Comparative Government  
 World Politics  
 International Relations  
 International Organization  
 International Law  
 Comparative Economics  
 Economic Development  
 International Economics

## MANAGEMENT CONCENTRATION

### Professional Preparation

#### *Aims*

Do your career interests lie in the broad area of administration rather than in specialized fields? The Management Concentration is designed to prepare you for a wide variety of administrative careers in business, government, and nonprofit institutions.

#### *Description of Concentration*

As a Management student you must have a basic understanding of all organization functions: accounting, marketing, finance, and production. However, your courses in these areas give you an overview of them, showing their interrelationships and the ways they can be used as management tools. For example, you study accounting as a help in the decision-making process, not as a specialty itself.

A similar approach is taken to courses in other areas. Since management is the process of getting things done through people, your professors pay significant attention to "people problems" to stress the importance of developing an effective work force.

The courses in the Management Concentration vary considerably in content and method of instruction because they vary in their objectives. In most of them, students are heavily involved in the conduct of classes and are required to work on group assignments. The purpose of this participatory approach is to prepare you for the demands of management in the business community.

#### *A View of the Five-Year Concentration*

The curriculum and teaching methods center around the development of basic skills and knowledge appropriate to administration, rather than upon specialized functional techniques. Although the case method of study is extensively used, a variety of teaching methods consistent with particular course objectives is employed. The basic objectives of the concentration are: to confront the student with appropriate learning experiences, to increase skills and knowledge in basic disciplines underlying administrative practice, and to develop judgment and skills in problem analysis and decision-making in organizations.

The Sample Freshman-Year Program of Studies and the General Requirements for the College of Business Administration are the same for all the concentration areas. See pages 51, 52.

### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
Cost Accounting for Management	4	Production Management	4
Management Information Systems	4	Business Electives	8
People & Productivity	4	Open Electives	32
Legal Aspects of Business	4		

## MARKETING CONCENTRATION

### Professional Preparation

#### *Aims*

A business organization not only designs and manufactures products, but also markets and sells them to manufacturers, wholesalers, retailers, and consumers. This is what a concentration in marketing is all about.

#### *Description of Concentration*

All the business activities that direct the flow of goods and services from producer to consumer are classified as marketing. The marketing process begins by determining the needs and wants of customers. Once these wants and needs are established, the organization's first objective is to produce a good or service to satisfy a particular consumer. Essential in all types of business are such activities as product design, research, pricing, packaging, transportation, advertising, selling, and servicing. The overall responsibility for these functions rests with the marketing manager.

The Marketing Concentration offers a wide variety of courses, taught by lecture and class discussion. They range from International Marketing and Consumer Behavior to Competitive Strategy and Marketing Research. Case materials are analyzed, and written reports are required.

#### *A View of the*

#### *Five-Year Concentration*



Outside the classroom, students may attend weekly meetings of the Advertising Club and of the American Marketing Association Student Chapter. Here they further their interests by discussing issues with leaders in the field.

Without successful marketing and advertising, industrial products remain unsold. More and more companies are finding that today's tempo of progress and high levels of production require up-to-date marketing techniques to generate a higher sales volume.

As a member of the management policy group, the marketing executive takes a broad view of all aspects of business management and policy. He also serves effectively as a trained specialist in his own area.

Success in the market is vital to every company, whatever its size. Therefore, the need for adaptable and informed marketing management exists in all types of business and industry.

The Sample Freshman-Year Program of Studies and the General Requirements for the College of Business Administration are the same for all the Concentration areas. See pages 51, 52.

### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
Marketing Management I & II	8	Business Elective	4
Marketing Research	4	Open Electives	32
Competitive Strategy	4		
Marketing Electives	8		

## TRANSPORTATION AND PHYSICAL DISTRIBUTION MANAGEMENT CONCENTRATION

### Professional Preparation

#### *Aims*

Transportation is an integral part of national and international distribution systems. It is a determining factor in the availability and prices of goods and services in our economy.

In corporate distribution, transportation specialists operate within a complex organizational framework in which goods are stored and moved. Effective management of this distribution process involves understanding of inventory control, warehousing, transportation options, and the interaction of these activities with other functional operations.

Growing concern with the economic and service conditions of the transportation industry has also created numerous job opportunities with government agencies which are engaged in transportation policy development and administration. Similar career opportunities may be found with carriers, such as airlines, railroads, and trucking companies which actively seek people who are familiar with the operational and regulatory aspects of their business.

The Transportation and Physical Distribution Management concentration seeks to prepare students for these diverse career opportunities.

#### *Description of Concentration*

The concentration attempts to provide the student with a balanced background in Transportation and Physical Distribution Management. Courses consider not only the viewpoint of the corporate shipper and carriers, but also those of public officials and consumer interests. Courses have a strong contemporary orientation and provide frequent interaction with practitioners from business and government.

#### *A View of the*

#### *Five-Year Concentration*

Course offerings in Transportation and Physical Distribution Management are sequenced so that students who desire only an introductory exposure may take one or several courses as part of a broader business background. An undergraduate concentration in the area consists of six courses. Four are required courses with the balance of the concentration being composed of electives.

The Sample Freshman-Year Program of Studies and the General Requirements for the College of Business Administration are the same for all the concentration areas. See pages 51 and 52.

## II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
Principles of Transportation	4	Transportation Electives	8
Physical Distribution		Business Elective	4
Management	4	Open Electives	32
Current Issues in			
Transportation Policy	4		
Seminar in Transportation	4		



## GENERAL BUSINESS CONCENTRATION

### Professional Preparation

#### *Aims*

Because innovation and relevance are key words in the College of Business Administration, the General Business curriculum is adaptable to each student's needs. Meeting with a faculty advisor, you tailor your academic program to meet your own career goals.

### *Description of Concentration*

Students will be required to select a total of at least seven business electives beyond the Basic Course Requirements.

The Sample Freshman-Year Program of Studies and the General Requirements for the College of Business Administration are the same for all the concentration areas. See pages 51 and 52.

## II. PROFESSIONAL REQUIREMENTS

Course	Q.H.
Business Electives	28
Open Electives	32

## College of Criminal Justice

Norman Rosenblatt, Ph.D., *Dean*  
Robert D. Croatti, *Assistant Dean*  
Robert Fuller, *Assistant to the Dean*

### FACULTY

#### Professors

Frederick Cunliffe, Ph.D.  
Edith E. Flynn, Ph.D.  
Robert Gallati, LL.D.  
Joseph Senna, M.S.W., D.Jur.  
Robert Sheehan, M.A.

#### Associate Professors

Romine R. Deming, Ph.D.  
Larry Siegel, Ph.D.

#### Assistant Professors

James Reed, M.A.T.  
Frank Schubert, D.Jur.  
Wallace Sherwood, L.L.M.  
Donna Turek, M.A.  
Nicolas Hahn, Ph.D.  
James Fox, Ph.D.  
Spencer Rathus, Ph.D.

### Professional Preparation

#### *Aims*

Established in 1966 under a grant from the Ford Foundation, the College of Criminal Justice prepares young men and women for professional careers in Criminal Justice. The curriculum has been designed primarily for students interested in careers in the areas of criminal justice services. Law enforcement, corrections, and rehabilitation are some of the careers students can pursue. It is also expected that a number of graduates will choose advanced study in academic fields including criminology, forensic science, social work, public administration, and law, as well as in the entire area of Criminal Justice.

This College was founded to meet a significant social problem of our times. Innovative methods and ideas, as well as basic information, are needed by those involved in community and social services to cope with the growing problems of our society. As part of its educational role, the College has received substantial grants from the Department of Justice and has been designated as a center of education and innovation in the field of Criminal Justice and forensic science, as well as a Training Center in Criminal Justice.

#### *A View of the Five-Year Program*

The College of Criminal Justice offers a five-year academic program on the Cooperative Plan of education which allows a candidate for the baccalaureate degree to undertake a specialized program of study. It is anticipated that "co-op" assignments will include work in police departments, juvenile and adult correctional institutions, and probation, parole, and social agencies.

The student will receive a broad educational background for his or her future role in criminal justice. Course work in the social sciences, behavioral sciences, and the humanities will be integrated with professional courses since the student will be preparing himself or herself for a career involving the social problems of people from all walks of life. The liberal content of the curriculum is not only highly

desirable for its value as a foundation upon which general intellectual development may be based, but also as an indispensable educational requirement for professional service in the field of special interest.

Graduates must be prepared to judge objectively the many socio-economic problems inherent in the administration of justice in contemporary American society. The College of Criminal Justice will help prepare its students for a career which will not only be personally productive and rewarding but intellectually stimulating as well.

### **Graduation Requirements**

Candidates for the Bachelor of Science degree must complete all of the prescribed work of the curriculum, which totals 173 quarter-hours credit.

Students who undertake the Cooperative Education Program must meet the requirements of the Department of Cooperative Education before they become eligible for their degrees.

No student transferring from another college or university is eligible to receive a degree until at least one year of academic work immediately preceding graduation has been completed at Northeastern.

### **Graduation with Honor**

Candidates who have achieved superior grades in their academic work will be graduated with honors. Upon special vote of the faculty, a limited number of this group may be graduated with high honors or with highest honors. Students must have been in attendance at the University for at least three years before they become eligible for honors at graduation.

### **Human Services**

A preprofessional program is offered for students interested in careers in Human Services. The Human Services major is designed to give the student a broad and comprehensive view of the needs of society and the variety of ways in which an individual may contribute toward meeting these needs. This interdisciplinary program involving the Colleges of Criminal Justice, Education and Liberal Arts aims to prepare students for entry into a wide variety of social service occupations. For details of the program and professional opportunities, see pages 166 and 167.

### **Sample Freshman-Year Program of Studies in the College of Criminal Justice**

#### *First Quarter*

English  
Economics  
Introduction to Sociology and  
Anthropology  
Hist. of Criminal Justice

#### *Third Quarter*

Economics  
Found. of Psychology  
Introduction to American  
Government  
Adm. of Criminal Justice

#### *Second Quarter*

English  
Found. of Psychology  
Introduction to Politics  
Hist. of Criminal Justice

*In addition to the above courses, a student may elect to take Basic ROTC.*



## Basic Course Requirements

### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Principles and Problems of Economics	8	*Introduction to Literature	4
*Introduction to Politics	4	**State and Local Government	4
Introduction to American Government	4	**Functional Human Anatomy I & II or	8
*Foundations of Psychology I & II	8	**Physics I & II or	8
*Introduction to Sociology and Anthropology	4	**General Chemistry	8
*Freshman Writing	4	Professional Development	1
		Non-CJ Electives (14)	56

### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Administration of Criminal Justice	4	Constitutional Problems I: The Police and the Criminal Suspect	4
*Topics in History of Criminal Justice	8	Criminal Justice Electives (9)	36
Criminology	4	Statistics	4
Criminal Law	4	Research Methods	4

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.



# College of Education

Frank E. Marsh, Jr., Ed.D., *Dean*

Charles F. Haley, Ed.M., *Associate Dean*

Philip J. Rusche, Ed.D., *Associate Dean, Director of Graduate School*

Janice Walker, A.B., *Assistant Dean of Graduate School*

Allison S. Young, A.B., *Administrative Assistant*

## **FACULTY** \*EDUCATIONAL ADMINISTRATION DEPARTMENT

### **Professor**

Joseph E. Barbeau, Ed.D.

### **Associate Professors**

Robert S. Butters, Ed.D.

Thomas F. Henstock, Ed.D.

Albert Kovner, Ed.D.

## \*COUNSELOR EDUCATION DEPARTMENT

Barbara A. Okun, Ph.D.

*Associate Professor and  
Chairperson*

### **Professor**

Thomas F. Harrington, Ph.D.

### **Associate Professors**

Irwin Doress, Ed.D.

William G. Quill, Ed.D.

Robert W. Read, Ed.D.

### **Assistant Professors**

Wilbert J. McClure, Ph.D.

Katherine P. Newman, C.A.G.S.

Louis J. Rappaport, Ph.D.

James F. Scorzelli, Ph.D.

## CURRICULUM AND INSTRUCTION DEPARTMENT

Russell J. Call, Ed.D.

*Associate Professor and  
Chairperson*

### **Professors**

Melvin E. Howards, Ph.D.

Maurice Kaufman, Ph.D.

Paul H. Tedesco, Ph.D.

### **Associate Professors**

Nicholas J. Buffone, Ph.D.

Leslie A. Burg, Ed.D.

Mary J. Lee, Ed.M.

Robert C. McClean, Jr., Ed.D.

Harold A. Miner, Ed.D.

Sandra M. Parker, Ed.D.

### **Assistant Professors**

Thomas H. Clark, M.A.

Blanche Korngold, Ed.M.,  
C.A.S.

Carlton B. Lehmkuhl, Ph.D.

John F. Maguire, Ed.M.

## FOUNDATIONS OF EDUCATION DEPARTMENT

John D. Herzog, Ph.D.

*Professor and Chairperson*

### **Professors**

E. Lawrence Durham, M.A.

E. Vaughn Gulo, Ed.D.

Mervin D. Lynch, Ph.D.

### **Associate Professors**

Ronald E. Baptiste, Ed.D.

Wendell R. Brown, LL.B., D.S.

Cheryl C. Hanks, Ph.D.

Joseph Meier, Arbitur, Ed.D.

Irene A. Nichols, Ed.D.

Alvin D. Zallinger, M.A.

\* This Department offers graduate courses only. Consult the Graduate School Bulletin for course offerings.

**Assistant Professors**

Susan E. Rindler, Ph.D.  
Barbara A. Schram, Ed.D.

**REHABILITATION AND  
SPECIAL EDUCATION  
DEPARTMENT**

Matthew H. Luzzi, Ed.D.  
*Professor and  
Chairperson*

**Professor**

George J. Goldin, Ph.D.

**Assistant Professors**

Louise LaFontaine, Ed.D.  
James L. Lomastro, Ph.D.  
Susan E. Massenzio, Ph.D.  
JoAnne S. McKay, Ed.M.  
Deanna B. Spielberg, Ed.D.  
Dorothy A. Weber, Ed.M.

**SPEECH AND AUDIOLOGY  
DEPARTMENT**

Robert J. Ferullo, Ed.D.  
*Professor and Chairperson*

**Assistant Professors**

Arlene T. Greenstein, Ph.D.  
Martin Hanapole, M.A.  
Robert Redden, Ed.D.  
Kristine E. Strand, M.A.

**Instructors**

Leonard Israel, M.A.  
Kathy A. Murphy, M.A.

**SPEECH AND HEARING  
CLINIC**

Joseph C. Aurelia, M.A., Coordinator  
Gilbert G. Neil, M.S., Supervisor

**Professional Preparation***Aims*

The College of Education at Northeastern offers professionally sound programs geared to the changing needs of today.

These programs have three major features:

- A. They are designed to make full use of the Cooperative Plan;
- B. They provide a broad, liberal academic base for professional study and experience;
- C. They emphasize the observational and clinical experiences to make theory relevant.

**Elementary Education**

*Humanities, Social Science, Reading-Language, Mathematics-Science, Special Education, Early Childhood Education.*

A solid professional preparation in elementary programs makes Northeastern graduates highly respected in a competitive marketplace. In-depth study and experience in one area provides the base for advanced study in a variety of concentrations, including remedial reading, counseling, rehabilitation, special education, and administration.

**Secondary Education**

Secondary majors are offered in social studies, English, foreign languages, earth science, general science, biology, chemistry, physics, and mathematics. The emphasis in these programs is on a sound curriculum that provides a base for effective teaching and permits the graduate to pursue advanced work in either the subject matter area or in education. Academically strong departments in the College of Liberal Arts provide the subject matter support for these programs. The College of Education faculty includes specialists in each of these areas to guide and direct the work of the students.

Students in the College of Education are expected to participate in the five-year cooperative program. Opportunities are steadily increasing for selected students to receive assignments in cooperating school systems, social agencies, hospitals, or libraries. In these settings, students enjoy unique experiences which greatly enhance self-confidence and professional growth.

### **Speech and Hearing Therapy**

The College of Education offers a Preprofessional Program in Speech and Hearing Therapy. This important professional area requires a master's degree for full certification. Students who complete the undergraduate program are prepared to enter graduate programs in Speech Therapy, Deaf Education, or Audiology.

### **Human Services**

A preprofessional program is offered for students interested in careers in Human Services. The Human Services major is designed to give the student a broad and comprehensive view of the needs of society and the variety of ways in which an individual may contribute toward meeting these needs. This interdisciplinary program involving the Colleges of Criminal Justice, Education and Liberal Arts aims to prepare students for entry into a wide variety of social service occupations. For details of the program and professional opportunities see pages 166 and 167.

### **Music Education**

Graduates of the Music Education major will be prepared to teach music to students from kindergarten to grade twelve. Competencies include: instrumental performance, (students are expected to develop a high level of performance on one instrument), the teaching of vocal music, conducting of musical groups, and a solid appreciation of music as a form of creative human experience. Cooperative work assignments in school settings are an integral part of the program.

### **Graduation Requirements *Degree***

The College of Education will award the Bachelor of Science in Education to those who successfully complete their program of preparation.

### **Quantitative Requirements**

The requirements will vary dependent upon the program pursued. Most students will need to accumulate 181 quarter-hours, with no program permitting fewer than 177. Specific program details may be obtained in the office of the Dean of the College of Education.

### **Qualitative Requirements**

Students in the College of Education are expected to maintain a minimum average of C. A minimum of C+ in the field of specialization and professional sequence is expected for recommendation for placement. Students are urged to rectify academic deficiencies at the earliest possible opportunity to prevent serious academic handicaps. The final three quarters preceding graduation must be completed in residence at Northeastern.

### **Graduation with Honor**

Candidates who have attained superior grades in their academic work will be graduated with honors, high honors, or highest honors. To

become eligible for honors at graduation, students must have attended Northeastern for at least six quarters.

### **National Teacher Examination**

Several states require NTE scores for certification, and a number of public school systems use NTE scores to evaluate applicants. Students are advised to obtain additional information from the office of the Dean of Education before deciding to write this examination.

### **Accreditation**

The programs offered by the College of Education are accredited by the National Council for Accreditation of Teacher Education. The College is a member of the American Association of Colleges for Teacher Education. Programs also are approved by the Interstate Certification Compact, assuring graduates of reciprocal certification in many states.

### **Sample Freshman-Year Program of Studies in the Teaching of Nonscience Fields**

ELEMENTARY EDUCATION/SPEECH AND HEARING  
THERAPY/ENGLISH/SOCIAL STUDIES/MODERN LANGUAGES

Mathematics or a modern language may be substituted for Political Science upon approval of the Dean during orientation week.

*Fall Quarter*  
Earth Science  
English  
Political Science  
Ed. Social Science

*Third Quarter*  
Western Civilization  
English  
Ed. Social Science Elective  
Elective

*Second Quarter*  
Earth Science  
Western Civilization  
Political Science  
Ed. Social Science Elective

*In addition to the above courses, a student may elect to take Basic ROTC.*

### **Sample Freshman-Year Program of Studies in the Teaching of Mathematics and Sciences at the Secondary Level**

GENERAL SCIENCE/EARTH SCIENCES/  
BIOLOGY/CHEMISTRY/PHYSICS/MATHEMATICS

*First Quarter*  
Basic Math or Calculus  
Chemistry or Physics  
Biology or English  
Ed. Social Science

*Third Quarter*  
Basic Math, Calculus, or Linear  
Algebra  
Chemistry or Physics  
English  
Ed. Social Science Elective

*Second Quarter*  
Basic Math or Calculus  
Chemistry or Physics  
Biology or English  
Ed. Social Science Elective

*In addition to the above courses, a student may elect to take Basic ROTC.*

### **Sample Freshman-Year Program of Studies in the Teaching of Music**

*First Quarter*  
Learning to Read and Write Music  
English  
Education and Social Science

*Second Quarter*  
Music Theory I  
English  
Keyboard I  
Elective

*Third Quarter*  
Music Theory II  
Keyboard II  
Two Electives

*In addition to the above courses, a student may elect to take Basic ROTC.*

Basic Course Requirements.



A. Elementary Education:

Students with a major in Elementary Education must follow an area emphasis selected from the curricular areas of the humanities, social sciences, mathematics and science, language/reading, special education, or early childhood education.\*\* The student is encouraged to consult his/her adviser for the specific courses and the order in which they are taken for both their area emphasis and professional requirements. The elementary majors' freshman program in education generally will apply in meeting the following general and professional curricular requirements.

I. GENERAL REQUIREMENTS

Courses Areas	Q.H.
A. Area Concentration	40
B. Humanities	16
1. Two literature electives (8 q.h.)	
2. One speech elective (4 q.h.)	
C. Social Sciences	16
1. Two history electives (8 q.h.)	
D. Mathematics and Science	16
**1. Two earth science courses (8 q.h.)	
2. Electives (8 q.h.)	
E. General Electives	16-32
4-8 depending upon area concentration	

II. PROFESSIONAL REQUIREMENTS

Course	Q.H.
**Education and Social Science	4
**Education Social Science electives (2)	8
Human Development and Learning I	4
Educational Psychology elective	4
Education Humanistic Foundation elective	4
Fundamentals of Arithmetic I and II	8
Analysis of Teaching and Educational Process	4
Elementary Education Compendium I and II	8
Fundamentals of Reading I and II	12
*Remedial Reading	4
*Linguistics and Reading	4
*Children's Literature	4
Introduction to Special Education	4
Introduction to Speech and Hearing Therapy	4
*Learning Disabilities	4
*Psychology of Mental Retardation	4
*Emotionally Disturbed elective	4
*Introduction to Rehabilitation	4
Student Teaching and Seminar	8
Professional Development	1
*Early Childhood Motor Skill Development	2
*Schools as Social Systems	4
*Creative Expression in Children	4
*Seminar in Early Childhood Development	4
*Language and Cognition	4
*Developmental Semantics and Syntax	4

B. Speech and Hearing Therapy:

Students in Speech and Hearing Therapy may expect a dynamic curriculum—a program that subscribes to guidelines and standards of the American Speech and Hearing Association. Thus, the following general and professional courses are required in this preprofessional program. The student should consult with his academic adviser for the specifics on courses and the order in which they are taken. The freshman program in education will apply in meeting the following requirements.

**I. GENERAL REQUIREMENTS**

Course Areas	Q.H.
A. Humanities	16
B. Social Sciences	20
1. Psychology of Abnormal Behavior (4 q.h.)	
2. Psychology of Personality (8 q.h.)	
3. Two history electives (8 q.h.)	
C. Mathematics and Science	16
D. General Electives	36

**II. PROFESSIONAL REQUIREMENTS**

Course	Q.H.
**Education and Social Science	4
**Education and Social Science electives (2)	8
Human Development and Learning I	4
Educational Psychology elective	4
Education Humanistic Foundations elective	4
**Introduction to Speech and Hearing	4
Introduction to Special Education	4
Speech Science	4
Anatomy and Physiology of the Auditory Mechanism	4
Anatomy and Physiology of the Vocal Mechanism	4
Developmental Semantics and Syntax	4
Introduction to Educational Statistics	4
Developmental Phonology and Phonetics	4
Introduction to Audiology	4
Phonemic Disorders	4
Fluency Disorders	4
Fundamentals of Reading I	6
Diagnostic Techniques	4
Orientation to Clinical Practice	4
Clinical Practice	8
Professional Development	1

\*Area concentration electives

\*\*These courses are usually taken in the Freshman year.

**C. Secondary Education:**

The programs for teaching at the junior or senior high school level include the following subject area majors:

Biology  
Chemistry  
Earth Science  
English  
General Science  
Mathematics  
Modern Languages  
Physics  
Social Studies

Students are expected to complete the requirements for their major field of study in addition to courses taken in their freshman year. However, the student's freshman courses generally apply in meeting the other course areas of the following distribution and professional requirements. The student should see his/her education academic adviser to obtain complete specification of the courses and their sequence for his/her general and professional course requirements.

**I. GENERAL REQUIREMENTS**

Course Areas	Q.H.
A. Major Subject area	40
B. Humanities	16
1. Two literature electives (8 q.h.)	
C. Social Sciences	16
1. Two history electives (8 q.h.)	
D. Mathematics and Sciences	16
E. General Electives	44-48
11-12 courses	

## II. PROFESSIONAL REQUIREMENTS

Course	Q.H.
**Education and Social Science	4
**Education Social Science electives (2)	8
Human Development and Learning II	4
Educational Psychology elective	4
Education Humanistic Foundation elective	4
Analysis of Teaching and the Educational Process	4
Measurement and Evaluation	4
†Writing and the Teaching of Writing	4
Methods and Materials of Teaching	4-8
#Teaching Reading in Secondary Schools	4
Student Teaching and Seminar	8
Professional Development	1

D. Human Services (see pages 163 and 164).

†For English majors only

#For English and Social Studies majors only

## E. Music Education

Students who choose to major in Music Education are expected to achieve a high level of competence on one instrument. The major, offered jointly with the College of Liberal Arts, requires completion of 16 quarter hours in social sciences, humanities, and mathematics/science. (An audition is part of the admission procedure.)

## I. GENERAL REQUIREMENTS

Course	Q.H.
History	8
Speech Elective	4
English	8
Literature	8
Education and Social Science	4
Human Development and Learning	8
Measurement and Evaluation	4
Education Humanistic Foundation elective	4
Education and Social Science electives (2)	8
Methods and Materials of Teaching	12
Analysis of Teaching and the Educational Process	4
Student Teaching Seminar	8
Professional Development	1

## II. PROFESSIONAL REQUIREMENTS

Course	Q.H.
Learning to Read and Write Music	4
Music Theory	12
Keyboard	8
Strings	8
Physics in Music	4
Music History or Music Literature Elective	4
Woodwinds	8
Organization of Instrumental Programs	4
Voice	4
Teaching Music in Elementary Schools	4
Brass	8
Teaching Music in Secondary Schools	8
Percussion	4

## College of Engineering

Melvin Mark, Sc.D., *Dean*

Thomas E. Hulbert, M.S., *Associate Dean*

Ralph S. Blanchard, M.S., *Assistant Dean*

George W. Hankinson, M.S., *Assistant Dean,*  
*Director of Graduate School*

David C. Blackman, B.S., *Assistant to the*  
*Dean, Director of Minority Affairs*

Bradford C. Perry, M.Ed., *Assistant to the*  
*Dean*

### Professional Preparation

The College of Engineering prepares students to participate constructively in a technologically changing world, thus contributing to the accumulation and application of new knowledge as professional engineers. Fundamentals are emphasized to provide the future engineer with the basic technical knowledge that will enable him to practice in a variety of positions. At the same time, study of the social sciences and humanities provides an opportunity to develop an awareness of the social, economic, political, aesthetic, and philosophical influences that are part of the context in which he will practice his profession.

#### Aims

The concept of education as a continuing, lifelong process necessary for effective work in an environment of constantly new facts, ideas, and scientific principles underlies the whole structure of the engineering curriculum.

Engineering education is directed toward assisting students to:

1. Understand the scientific principles and knowledge of that particular branch of engineering chosen;
2. Comprehend and develop competence in the engineering method and its application;
3. Communicate effectively and succinctly the important results of any technical study both verbally and graphically;
4. Acquire the motivation for continuing professional growth.

### Programs

#### Day Cooperative Programs

The College offers five-year cooperative programs in Civil, Mechanical, Electrical, Chemical, and Industrial Engineering leading to the degree of Bachelor of Science with specification according to the engineering department in which the student qualifies. The College also offers a General Engineering Program which leads to the awarding of an unspecified Bachelor of Science degree in which the student has the opportunity to design his curriculum with his career objectives in mind. The various curricula effectively prepare students to seek employment in industry or to continue their education in graduate schools. The College is operated on the Cooperative Plan.

Under the six programs, several options or specialized concentrations are available. They are:

*Electrical Engineering—Power Systems Option.* To meet the needs of the rapidly expanding electric power industry, Northeastern has a special program in Power Systems Engineering. This program is

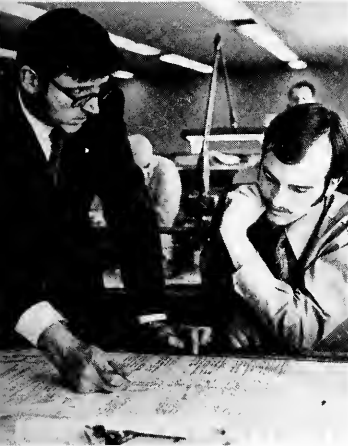


offered on the Cooperative Plan and can result in a bachelor's and master's degree in six years. The subject matter is basically that of electrical engineering augmented by work in power systems analysis, computers in power systems, nuclear plant considerations, power system planning, protection and stability, MHD and DC transmission.

*Civil Engineering—Environmental Option.* This option is designed for engineers intending to work in the field of environmental protection and improvement. Topics included at the undergraduate level are Water Supply, Treatment & Wastewater Disposal, Solid Waste Disposal, and Air Pollution. The cooperative program, resulting in a bachelor's degree in civil engineering in five years, enables one to go immediately into professional practice in government agencies, industry, or private consulting firms.

*Electrical Engineering—Computer Engineering Option.* This newly approved option has been developed to educate engineers to work in a variety of jobs in the computer industry or as preparation for graduate study. The option builds upon the basic electrical engineering curriculum by providing specialized courses in computer hardware and computer design. As with all programs, this option operates on the Cooperative Plan and leads to a Bachelor of Science in Electrical Engineering.

*General Engineering—Computer Science Option.* The major objective of this curriculum is to provide a balanced program of Computer Science, related technical subjects, and the Humanities. The student can draw upon the courses and facilities of many of the departments at Northeastern to fulfill his/her technical requirements. Combining this with the practical experience gained through Northeastern's Cooperative Education Plan, graduates of this program have an unequalled opportunity to enter the Computer Science field with an excellent education and up to two years of practical experience.



#### *Part-time Program Offered During Evening Hours*

The College of Engineering also offers an eight-year curriculum leading to the degree of Bachelor of Science in Electrical, Mechanical, or Civil Engineering. Classes are held in the evening. Admission and course requirements are the same as for the degree under the Cooperative Plan. For further information, consult the evening bulletin of the College of Engineering, or call the Dean of Engineering's office.

#### *General Description of Programs*

The undergraduate academic program begins with three quarters of full-time study. Course work during the first year builds the student's understanding of mathematics and the physical sciences and improves his ability to communicate ideas both verbally and graphically.

Since the first year of study is nearly identical for all students in the College, the choice of specialization may be changed at the end of the freshman year without loss. The freshman courses act as a foundation for upper-class studies which will develop basic understanding of concepts in the engineering sciences and introduce the student to the engineering method and its application. About four-fifths of the upper-class program is devoted to scientific and technological study, and about one-fifth to humanistic-social courses, with the aim of balancing the student's growing technical proficiency with a similar development of his appreciation of the nontechnical aspects of society and culture.

Cooperative work in the branch of engineering chosen will begin upon completion of the freshman year and continue throughout the remaining upper-class years. The work assignments during this time will prove to be most valuable in helping to integrate the important elements of both an engineering and a liberal education. They will be instrumental in teaching the value of teamwork while, at the same time, helping the student to acquire insight into the problems of actual engineering practice.

## **Graduation Requirements**

### *Degrees*

The College awards the Bachelor of Science degree in Chemical, Civil, Electrical, Industrial, and Mechanical Engineering, as well as the Bachelor of Science degree without specification.

### *Qualification for Degrees*

Candidates for the Bachelor of Science degree must complete all of the prescribed work of the curriculum in which they seek to qualify with no academic deficiencies. Students who undertake cooperative work assignments must meet the requirements of the Department of Cooperative Education before they become eligible for their degree.

No student transferring from another college or university is eligible to receive the Bachelor of Science degree until he has completed at least one academic year at Northeastern immediately preceding his graduation.

### **Graduation with Honor**

Candidates who have attained superior grades in their academic work will be graduated with honors. Upon special vote of the faculty, a limited number of this group may be graduated with high honors or with highest honors. Students must have been in attendance at the University at least six quarters before they may become eligible for honors at graduation.

### **Accreditation**

All undergraduate day programs with specification and the College of Engineering's part-time evening program in Electrical Engineering are accredited by the Engineer's Council for Professional Development.

### **Women in Engineering**

Recognizing its opportunities, more women are entering the field of engineering every year. Aware of their qualifications and potential, industry and government provide positions of responsibility for competent women engineers. Any woman with scientific or technical interests should consider the many possibilities offered in engineering.

### **Minorities in Engineering**

Through its Progress in Minorities in Engineering (PRIME) program, the College seeks to expand educational opportunities for qualified Blacks, Hispanics, and American Indians who are citizens or have permanent resident status. It provides full scholarships based on merit and/or need. Every effort is made to provide enough aid so that outside work is not necessary during the freshman year. Guidance counseling and tutorial services are among the supportive services provided by the program.

The Sample Freshman-Year Program of Studies in the College of Engineering is the same for all majors in the College.

**Sample Freshman-Year Program of Studies in Engineering**

*First Quarter*  
Basic Engineering  
Calculus  
Physics  
English

*Third Quarter*  
Calculus  
Physics  
General Chemistry  
English

*Second Quarter*  
Basic Engineering  
Calculus  
Physics  
General Chemistry

*The first-year pattern of two-term courses may vary according to assigned section.*

*In addition to the above courses, a student may elect to take Basic ROTC.*



## CHEMICAL ENGINEERING DEPARTMENT

Ralph A. Troupe, Ph.D., *Professor and Chairman*

### FACULTY Professor

John A. Williams, Ph.D.

### Instructor

Neil G. Sweerus, M.S.

### Associate Professors

Ralph A. Buonopane, Ph.D.

Bernard M. Goodwin, Sc.D.

Richard R. Stewart, Ph.D.

## Professional Preparation

### *Aims*

Since the field of chemical engineering is so varied, the program of study has been designed to provide students with a broad training in which fundamental principles are stressed. This training will enable them to acclimate themselves readily to graduate school or to whatever industry they may choose. The faculty stresses the principles of environmental control, conservation, and technology assessment to emphasize the importance of the engineer's role in society.

### *Description of Major*

The chemical engineer has been defined as a "professional man experienced in the design, construction, and operation of plants in which materials undergo chemical and physical change." It is the task of the chemical engineer to reduce the costs, increase the production, and improve the quality of the products in the industry.

Chemical engineering has grown out of the discoveries in the chemical laboratories which have served as a foundation for a great many new industries whose production processes involve chemical as well as physical changes.

Petroleum refining, plastics, manufacture of synthetic fibers, and hundreds of other industries require men and women trained in chemistry as well as in engineering. Moreover, much of the training received by the chemical engineer is now being applied to the rapidly developing fields of nuclear engineering, space engineering, and environmental controls. Many older industries, such as foods, textiles, paints and varnishes, and leather are also employing chemical engineers, for the purpose of benefiting mankind rather than contributing to pollution or waste of resources.

### *A View of the Five-Year Major*

After one has taken the fundamental courses in chemistry, mathematics, and physics required of all engineering students, he will go on to advanced courses which apply these fundamentals to the solution of engineering problems. These upper-class courses are a skillful blend of the latest mathematical and theoretical analyses with the practical aspects of the profession.

Chemical Engineering is one of the fastest growing major fields of engineering. Tremendous growth is occurring in research and devel-

opment, especially in such fields as petroleum and chemicals. (About one-third of all chemical engineers are employed in these fields.)

### Accreditation

The Department is accredited by the American Institute of Chemical Engineers as well as by ECPD.

### Laboratories

The chemical engineering laboratories are designed to acquaint the student with the experimental approach to the solution of engineering problems and to develop research interests. Research is conducted in the area of environmental control, energy conservation and transformation, technology assessment, photoreactions, process dynamics, control theory, computer applications, kinetics and design.

**Experimental Methods Laboratories**—The student is first taught the basic measurements in engineering with emphasis on temperatures, pressure, and flow rate. Following this, he is given problems in such areas as transport properties, kinetics, thermodynamics, and process dynamics, which he must solve experimentally. He is required to design the experiment, conduct it, reduce the data using computers, and write a final report. In the experiments, he uses pilot scale chemical engineering equipment when applicable.

**Research Laboratories**—These are used by advanced undergraduates and graduate students to carry out research in the various areas of chemical engineering. Analytical laboratories and shop facilities are available to support these research projects.

**The Nuclear Engineering Laboratory**—This laboratory contains a subcritical reactor purchased in part from funds supplied by the U.S. Atomic Energy Commission. The assembly is water-moderated and fueled with natural uranium.

The installation also includes a reactor simulator which has the same type of instrument panel and gives the same responses and reactions as any critical reactor in the country.

The Sample Freshman-Year Program of Studies in the College of Engineering is the same for all majors in the College. See page 79.



### Basic Course Requirements

#### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*English	8	**Physics	4
*General Chemistry	8	**Physics Lab.	2
*Basic Engineering	8	Math	8
*Calculus	12	Economics	8
*Physics	12	Liberal Arts	
**Calculus	8	Electives (4)	16

#### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
**Organic Chemistry	8	Experimental Methods	8
**Polymer Technology	4	Chemical Engineering	
**Chemical Engineering		Thermo.	4
Calculations	8	Chemical Engineering	
Chemical Engineering	8	Kinetics	4
Physical Chemistry	8	Design or Research	
Transport Phenomena	8	Techniques Electives	12
		Technical Electives (4)	16

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.

## CIVIL ENGINEERING DEPARTMENT

John J. Cochrane, Ph.D., *Associate Professor  
and Chairman*

### FACULTY

#### Professors

Reginald L. Amory, Ph.D.  
Alcoa Foundation Professor  
of Civil Engineering  
Kenneth M. Leet, Sc.D.

#### Associate Professors

Frederic C. Blanc, Ph.D.  
Leroy M. Cahoon, M.S.  
John J. Cochrane, Ph.D.  
Constantine J. Gregory, Ph.D.  
Robert L. Meserve, M.S.  
Saul Namyet, B.S.  
James C. O'Shaughnessy, Ph.D.

#### Assistant Professors

Walter E. Jaworski, Sc.D.  
Antonis Koussis, Ph.D.  
Michael Kupferman, Ph.D.  
Richard J. Scranton, M.S.  
Gary Stewart, M.S.  
Irvine W. Wei, Ph.D.  
Gerald A. Woelfl, Ph.D.  
Mishac K. Yegian, Ph.D.

#### Instructors

Mikhail Schiller, M.S.  
Robert Taylor, M.S.  
Alan E. Willis, M.S.

### Professional Preparation

#### Aims

The Civil Engineering Department prepares its students for a professional career in one or several of the areas into which the field is traditionally divided: structures, water supply, wastewater disposal (environmental design), transportation, soil mechanics and foundations, and construction management. A major aim of the program is to provide a fundamental, flexible, and rigorous engineering education so that, in view of inevitable change within the field, the graduate will be in a position to build continuously on his basic knowledge and thus avoid any problem of technical obsolescence.

#### Description of Major

Another major aim of the program is to provide the student with a broader vision—of the world, society, and the individual—than that of a one-sided technical program. A wide range of electives in the humanities, social sciences, and the basic sciences will encourage the student to investigate areas outside his immediate field and to extend his personal interests and involvements. In view of the growing problems of urban overpopulation, congestion, and pollution—and the increased social awareness of concerned individuals—the civil engineer no longer operates, as he did even in the recent past, with the requirements of a construction project or a client's interest solely in mind. Now the engineer must address himself to the larger considerations of the rights of all those affected by his urban planning decisions or proposed construction.

#### A View of the Five-Year Major

The five-year work-study curriculum is divided into eleven quarters of school and eight quarters of work. The work phase often provides the



student with insight into the types of activity—drafting, surveying, design, construction—that the young engineer will normally confront. Thus the well-motivated student can determine from these work experiences what further course work preparation he will require to work successfully as a practicing engineer. The work stint also provides a certain amount of self-support and independence.

The first years of the in-school curriculum are, for the most part, devoted to the fundamentals of math, basic sciences, and engineering that provide the foundation for later professional studies. The final years are devoted to a range of professional subjects, both required and elected. Guidance from a faculty adviser is available throughout the academic program to work out optimal programs for each individual.

The curriculum is thus intended to prepare the young civil engineer to take up the design and construction of structures, to solve problems in the field of transportation, and to handle the design of water supply and waste disposal systems.

Upon completion of the requirements for the Bachelor of Science in Civil Engineering, the graduate is well prepared to enter the engineering profession or to go on to graduate school for advanced training. The young civil engineer will probably find that graduate work is a necessary adjunct for advancement.

During his first period of employment as a graduate, the young civil engineer may expect to spend a period in the field or the office. The work will probably involve some drafting along with design computations, layout work and supervision of construction, or the obtaining and analyzing of information for studies and reports. As experience is gained, the graduate will be entrusted with greater challenges and more responsibilities in design and in supervision.

Opportunities for employment exist at municipal, state, and federal levels, in private consulting practice, general construction, and industry.

### **Part-Time Program**

The Civil Engineering Program is also available on a part-time basis. The classes are scheduled during the evening hours, usually two evenings per week. The curriculum can be completed in a minimum of eight years.

Transfer programs for students with Associate Degrees or Bachelor's Degrees in Civil Engineering Technology can be arranged in either the day co-op or the part-time program.

### **Laboratories**

#### *Soils Laboratory*

The soils laboratory is well equipped to perform all standard soils tests as well as model studies.

A wide range of laboratory equipment permits the student to perform anything from nominal soil classification tests to sophisticated triaxial strength tests. The triaxial tests can be of strain-controlled loading, stress-controlled loading, or a combination thereof. Pore pressures measurements are made either electronically with pressure transducers or manually with null pressure indicators.

Consolidation test equipment of various load ranges and types is available. Consolidation tests applying loads up to 50 tsf on the sam-



ple are possible. In addition, the test may be conducted using back pressure technique to saturate the soil sampler.

Research can be conducted to study the seepage problems associated with earth dams, open braced cuts, etc. In addition, model studies on the bearing capacity of footings or piles are possible.

#### *Hydraulics Laboratory*

The laboratory is primarily for demonstration purposes. Equipment consists of a Flume with a varying gradient, water quantity measuring devices, such as Short Tube, Orifices, Weirs, Venturi Meter, and Reynolds Number. Research work can be conducted on many of the units.

#### *Water Pollution Control Laboratory*

Capabilities include analyses of both water and wastewater samples, in physical, chemical, and biological regimes. Laboratory and supporting equipment enable complete studies in the following areas: water analyses, wastewater analyses, stream and estuary studies, waste treatability studies, unit operations, bioassay techniques, pilot plant studies, tracer studies, and complete instrument analyses.

Instrument analyses capabilities include: atomic absorption, total carbon, organic carbon, specific ions, gas chromatography, spectrophotometric and gravimetric analyses.

Special areas are available for unit operation studies in water and wastewater treatment. A well-equipped machine shop has been established so that special equipment can be designed and built for model-prototype studies.

A new laboratory, the Gillette Environmental Research Laboratory, is fully equipped for research and development work in connection with the Ph.D. program in Environmental Engineering and Science.

#### *Air Pollution Laboratory*

Equipment is available to sample ambient air, gaseous and particulate pollutants, and for evaluation of the physical, chemical and biological characteristics of atmospheric pollutants. Continuous air samples may be established in any area in Metropolitan Boston and the samples analyzed by ultraviolet-visible, fluorescence, and atomic spectrophotometry, as well as gas chromatography and infrared techniques. A portable carbon monoxide analyzer with printout equipment is available for measurement studies and research work. Research in air pollution problems is a continuing project.

Recent equipment additions make it possible to conduct studies in noise pollution.

#### *Civil Engineering Testing Laboratory*

The testing laboratory is temperature-controlled and completely equipped to conduct all the usual tests on bituminous materials and mixtures, Portland cement and concrete. Equipment is also available for testing structural models.

The laboratory is suitably equipped to conduct research in the above materials, such as resistance to freezing and thawing, abrasion resistance, setting time, and strength.

Computer facilities for research studies in transportation are available.

The sample Freshman-Year Program for the College of Engineering is the same for all majors in the College. See page 79.



**Basic Course Requirements****I. GENERAL REQUIREMENTS**

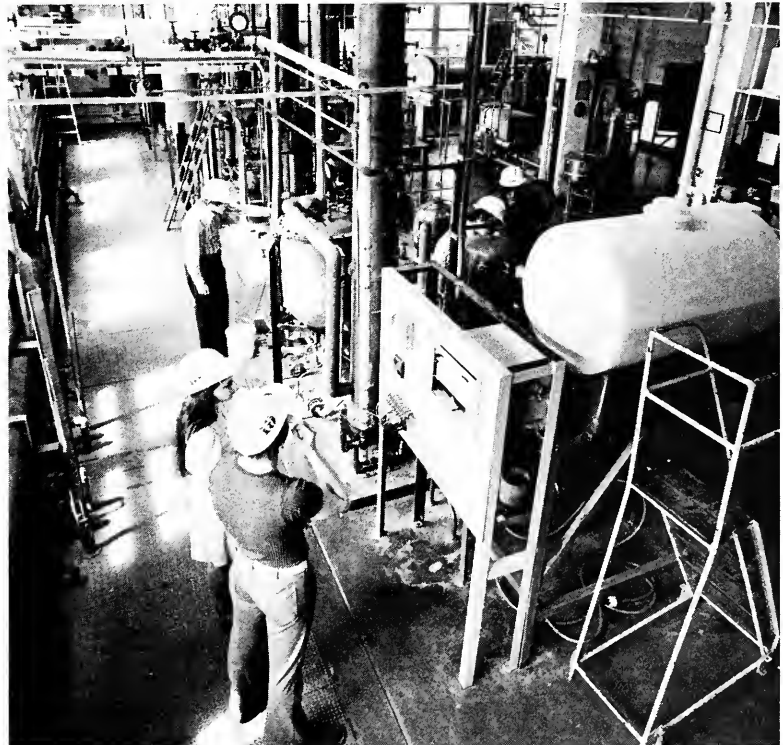
Course	Q.H.	Course	Q.H.
*English	8	**Physics	4
*Calculus	12	**Physics Lab.	2
*Basic Engineering	8	**Economics	8
*Physics	12	Math	8
*Chemistry	8	Public Speaking	2
**Calculus	8	Liberal Arts Electives (5)	20

**II. PROFESSIONAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
**Thermodynamics	4	A. Professional	
**Engineering Measurements	6	Electives—7 required	
**Structural Mechanics	8	Civil Engineering Systems	4
Dynamics	4	Structural	
Materials	4	Analysis II, III	8
Fluid Mechanics	4	Structural Design II	4
Electrical Engineering	4	Concrete Design II	4
Soil Mechanics (w. Lab.)	6	Hydraulic Engineering	4
Environmental Engineering I	4	Engineering Geology	4
Concrete Design I	4	Foundation Engineering	4
Structural Design I	4	Transportation	
Structural Analysis I	4	Engineering	4
		Probability for	
		Civil Engineering	4
		Environmental	
		Engineering II, III	8
		Environmental Design	4
		Air Pollution	4
		Statistics	4
		Engineering Economy	4
		Construction Engineering	4
		Highway Engineering	4

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.



## ELECTRICAL ENGINEERING DEPARTMENT

J. Spencer Rochefort, M.S., *Professor and Chairman*

### FACULTY

#### Professors

Sze-Hou Chang, Ph.D.  
Basil L. Cochrun, M.S.  
Ladislav Dolansky, Ph.D.  
James M. Feldman, Ph.D.  
Kenneth I. Golden, Ph.D.  
John G. Proakis, Ph.D.  
Harold R. Raemer, Ph.D.  
Wilfred J. Remillard, Ph.D.  
Martin Schetzen, Sc.D.  
Walter C. Schwab, Ph.D.  
Robert D. Stuart, Ph.D.

Arvin Grabel, Sc.D.  
Richard Grojean, M.S.  
Martin E. Kaliski, Ph.D.  
Wayne G. Kellner, Sc.D.  
Robert J. Lechner, Ph.D.  
Walter H. Lob, M.S.  
Morton Loewenthal, Ph.D.  
Robert N. Martin, M.S.  
Francis D. McCarthy, Ph.D.  
Louis J. Nardone, M.S.  
Sheldon S. Sandler, Ph.D.  
Mulukutla S. Sarma, Ph.D.  
Michael Silevitch, Ph.D.

#### Associate Professors

Ralph E. Bach, Ph.D.  
Marcello J. Carrabes, M.S.  
Robert A. Gonsalves, Ph.D.

#### Assistant Professor

John D. Glover, Ph.D.

### Professional Preparation

#### Aims

Electrical engineers have been primarily responsible for the development of the computer, the pacemaker, television, satellite communication, space navigation, and the means of providing the energy needed to light our cities and towns and run our industries. At present, electrical engineers are also working to help find solutions to the problems of air pollution, transportation, and health care. These examples are just a small sample of the growing wealth of evidence which indicates that electrical engineering has impact on all facets of our society. As with all branches of technology, the societal functions and aims of electrical engineering are to maintain and improve the quality of life.

#### Description of Major

Despite the diversity of its application, electrical engineering may be conveniently divided into the two broad, general areas of *information sciences* and *energy resources*. The area of information sciences is concerned primarily with systems whose function is computation, communication, or control. Included in this area are the circuits and devices which comprise the systems and the application of the systems and engineering techniques to other disciplines. Energy resources deal with the problems related to the sources, generation, and distribution of large quantities of electrical energy. It should be noted, however, that no rigid boundary exists between the two areas and many of the technical specialties within electrical engineering are applicable to both areas.

Many electrical engineers are involved with the more traditional activities of system design and development, such as the information

sciences or energy resources area. Other electrical engineers apply the knowledge gained in their professional education to such disciplines as ocean exploration, meteorology, experimental psychology, electronic music, health-care systems, bio-electronics, and educational devices for the disadvantaged.

The optimistic outlook for electrical engineering is based on the breadth of the technical activity described above. We are constantly reminded that among the pressing problems in our society are the "energy crisis," pollution, urban transportation, housing, health care, and the plight of the socially and physically disadvantaged. No one has yet been able to forecast how these problems will be solved without the use of technological resources. Readily available electrical energy, data processing, electronic instrumentation and control, and communication are among the crucial resources needed.

### *A View of the Five-Year Major*

The purpose of the curriculum is to provide the student with an education that has the breadth and depth necessary for professional practice. Breadth is needed to give the student an awareness of all that electrical engineering encompasses and to provide the necessary background for self-study, a major criterion for professional success. Individual career objectives and initial professional achievement can result in part from learning a subject area in some depth. To achieve the balance between depth and breadth, the curriculum is divided into the *core program* and *elective courses*.

The core program includes those courses whose content is applicable to all specialties in electrical engineering. In addition, it provides the student with exposure to all areas in E.E. and a basic background for future learning. Subject areas covered in the core program are:

1. Circuits and Systems
2. Electronic Devices and Circuits
3. Digital Computer Design
4. Electromagnetic Theory
5. Electromechanical Dynamics (Energy Conversion)
6. Electrical Measurements (Laboratories)



The elective courses are designed to permit the student to develop his/her own interests. Many students use this part of the program to learn a particular subject in depth and also to better prepare for graduate studies. A broad range of courses is offered and includes: Digital Computer Techniques, Numerical Methods, Communication Systems, Control Systems, Advanced Electronics, Solid-state Devices, Power Systems, Wave Propagation and Distributed Circuits, Network Theory, and Mathematical Techniques in E.E.

In addition, students who wish to do individual projects or learn about a subject area not offered in an elective course may enroll in the senior project course. The student in this course works with an interested faculty adviser on a one-to-one basis.

Electrical engineering graduates of Northeastern have attended and done well at all of the prestigious graduate schools. Those who have entered industry find they compare favorably with graduates of other institutions and many have risen to positions of leadership in their professions.

### Five-Year B.S.-M.S. Program

Students with high QPA's may elect the five-year B.S.-M.S. program. By taking some overloads and foregoing one senior co-op term, a student may complete requirements for both the B.S.E.E. and M.S.E.E. degrees within five years.

### Power Systems Engineering

The Power Systems Engineering Program in Electrical Engineering is a special option for those who wish to specialize in energy resources. This program is conducted in cooperation with the electric power companies in New England and other eastern states. The master's degree can be obtained in six years of cooperative education. For further information about this program, students are advised to contact Dean Phillip R. McCabe, Admissions, 150 Richards Hall.

### Computer Engineering

The option in Computer Engineering is provided for those who wish to specialize in that portion of electrical engineering relating to computers. Further information about this program may be obtained at the office of the E.E. Department, Room 411, Dana Building.

### Laboratories

The seven laboratory courses are an integral part of the educational process. Their purpose is to both supplement concepts developed in core courses and to introduce the student to design and experimental techniques.

To provide this facet of the educational experience, the department has laboratory equipment in excess of \$1.5 million. In addition to standard professional laboratory equipment, several specialized laboratory facilities are maintained. These include several small digital computers such as the PDP-8, an analog computer, a laser and optics laboratory, and a semiconductor devices laboratory, in which students fabricate transistors and integrated circuits.

The Sample Freshman-Year Program of Studies in the College of Engineering is the same for all majors in the College. See page 79.

### Basic Course Requirements

#### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Calculus	12	**Calculus	8
*Physics	12	**Physics Lab.	2
*General Chemistry	8	**L.A. Electives (2)	8
*English	8	Math Analysis	8
*Basic Engineering	8	L.A. Electives	20
**Physics	8		

#### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
**Circuits and Systems I & II	8	Field Theory I & II	8
Circuits and Systems III & IV	8	Material Science	4
Discrete Systems	4	Design and Organization of Digital Computers	4
Thermodynamics	4	Electronics III	4
Mechanics	4	Electromechanical Dynamics	4
Electrical Engineering Lab.	8	Professional Development	0
Electronics I & II	8	Technical Electives (4)	16

*\*\*These courses are usually taken in the Freshman year.*

*\*These courses are usually taken in the Sophomore year.*

The Electrical Engineering Department offers a wide variety of technical electives. These enable students to coordinate elective choices to satisfy their personal objectives of breadth or depth. To aid in selection, the elective courses are grouped by discipline.

### Technical Electives

*Electronic Circuits and Systems*  
 Selected Topics in Electronics  
 Theory & Tech. of Semicond. Dev. I  
 Theory & Tech. of Semicond. Dev. II  
 Senior Project Labs  
 Control Systems  
 Communication Theory  
 Math Techniques in E.E. I & II  
 Numerical Methods & Computer Applications  
 Digital Techniques

*Electromagnetic Theory*  
 Wave Transmission & Reception  
 Advanced Topics in E & M  
 Math Techniques in E.E. I & II  
 Numerical Methods & Computer Applications  
 Theory & Tech. of Semicond. Devices I & II  
 Senior Project Labs.

*Computer Sciences*  
 Numerical Methods & Computer Applications  
 Digital Techniques  
 Fundamentals of Computation Structures  
 Introduction to Theory of Digital Computation  
 Communication Theory  
 Control Systems  
 Math Techniques in E.E. I & II  
 Selected Topics in Electronics  
 Senior Project Labs.

*Systems Theory*  
 Control Systems  
 Communication Theory  
 Math Techniques in E.E. I & II  
 Numerical Methods & Computer Applications  
 Digital Techniques  
 Power Systems I & II  
 Wave Transmission & Reception  
 Senior Project Labs.

**Power Systems Option Leading  
 to B.S. Degree-5 years  
 M.S. Degree-6 years**

### Basic Course Requirements

#### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Calculus	12	**Calculus	8
*Physics	12	**Physics Lab.	2
*General Chemistry	8	**L.A. Electives (2)	8
*English	8	Math Analysis	8
*Basic Engineering	8	L.A. Electives (6)	24
**Physics	8		

#### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
**Circuits and Systems I & II	8	E.E. Power Lab.	4
Circuits and Systems III & IV	8	†Math. Methods in E.E.	4
Thermodynamics	8	Nuclear Engineering	4
Electrical Engineering Lab.	4	Technical Electives	4 or 8
Electronics I & II	8	Undergraduate Seminar	4
Field Theory I & II	8	†Linear Systems Anal.	4
Transients in Power Systems	4	†Anal. of Power Systems	4
†Probability	2	†Seminars (2)	4
Electromechanical Dyn.	4	†Power Systems Planning	4
Mechanics	4	†Special Topics in Power	2
Machines and Systems	8	†Grad. Electives	16
Electric Power Systems	8		
Professional Development	0		

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.

†These are Graduate courses and are not needed for the B.S. degree.

**Computer Engineering Option**  
**Leading to B.S. Degree-5 years**

I. GENERAL REQUIREMENTS: Same as general E.E. except for deletion of one 4 Q.H. required math analysis course and one 4 Q.H. liberal arts elective.

II. PROFESSIONAL REQUIREMENTS: Same as general E.E. except for the deletion of one 4 Q.H. required E.E. course (Electromechanical Dynamics) and one 4 Q.H. technical elective and the following additional required courses:

Course	Q.H.	Course	Q.H.
Introduction to Digital Computers II	4	Machine Language and Assembly Language Programming	4
Programming Systems	4		



## **GENERAL ENGINEERING PROGRAM**

**ADVISORY COMMITTEE FOR**  
**1977 - 1978**

Thomas E. Hulbert, M.S., *Associate Dean of Engineering, Chairman*  
 Arvin Grabel, Sc.D., *Electrical Engineering*  
 Stewart Hoover, Ph.D., *Industrial Engineering*  
 Richard J. Murphy, Ph.D., *Mechanical Engineering*  
 Saul Namyet, B.S., *Civil Engineering*  
 Wilfred P. Rule, M.S., *Graphic Science*  
 Richard R. Stewart, Ph.D., *Chemical Engineering*

**Professional Preparation**

*Aims*

Engineering and technology influence all areas of endeavor and have a profound effect on the lifestyle and institutions of the society. The impact is both cultural and scientific and is manifested by the awareness that solutions to society's problems are in part technological. The major purpose of the General Engineering Program is to provide flexible, interdisciplinary educational opportunities based on fundamental engineering concepts. The interdisciplinary nature allows the student to develop other areas of interest in which an engineering background is professionally useful.

### *Description of Major*

The program is designed for students whose interests are in engineering-related professions rather than in the traditional profession of engineering. It is expected that the work engaged in by graduates of this program will encompass the entire spectrum of professional activity. Typical areas include computers, urban technology, social systems, and health care.

The General Engineering Program, including the computer science option, is highly elective and gives the student the opportunity to develop, in conjunction with his adviser, a program designed to meet his own career objectives. To achieve this goal, the student is exposed to the fundamental engineering areas of electric circuits, systems, mechanics, thermodynamics, and materials. These courses are based on basic principles developed in early courses in mathematics and physics.

As the computer is a basic tool in any technological environment, each student is required to learn the elements of computer programming.

Graduate education and continuing education are increasingly important in professional life. By appropriately planning his/her program, the student will be able to satisfy the course requirements necessary for admission into all types of graduate and professional schools, including law, medicine, public health, and social sciences, as well as engineering.

### *A View of the Five-Year Major*

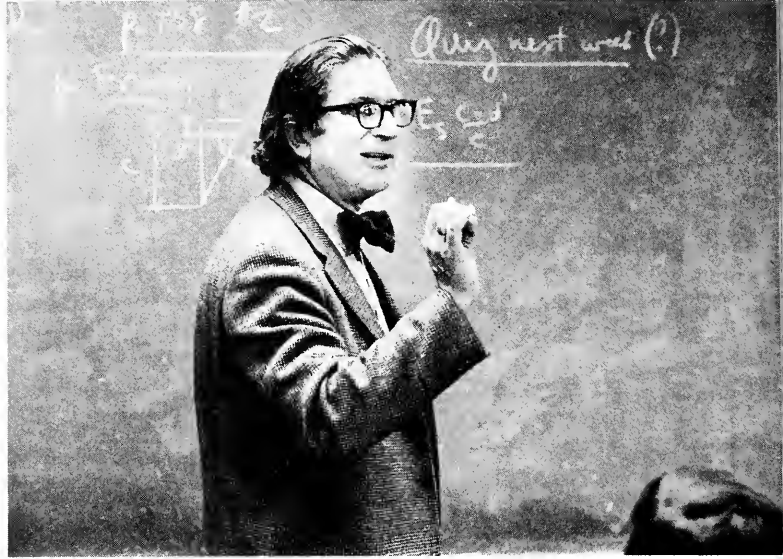
Each student in the program is required to satisfy the following minimum requirements beyond the freshman year:

- 8 quarter hours in Mathematics
- 6 quarter hours in Physics (including laboratory)
- 4 quarter hours in Circuit Theory
- 4 quarter hours in Materials
- 4 quarter hours in Systems
- 4 quarter hours in Thermodynamics
- 16 quarter hours in Social Sciences (consisting of at least two sequences of two courses each from the areas of sociology, economics, political science, and psychology)
- 8 quarter hours in the Humanities, consisting of at least two courses from the areas of art, history, language and literature (not including grammar), music, philosophy, and drama (not including public speaking)

The remaining portion of the program is completely elective but must be designed to fit the student's career objective. At least 24 quarter hours of course work must be taken in the professional departments in the College of Engineering (Chemical, Civil, Electrical, Industrial, and Mechanical Engineering).

Beyond the freshman year, the students plan their programs in conjunction with a faculty adviser. Basically, the elective program permits each student to plan a distinctive and highly individualistic curriculum. These indicate part of the range of curriculum planning available to the student.

While each student is enrolled in a "different program," the goals of each are the same: the breadth of an engineering-based liberal education in combination with the development of professional skills.



Students in the Computer Science Option are required to satisfy the following minimum requirements beyond the freshman year:

4 quarter hours in Computer Data Structures

4 quarter hours in Numerical Methods and Applications

4 quarter hours in Computer Architecture

4 quarter hours in Computer Languages

A minimum of 28 quarter hours in Computer Sciences and applications in addition to those listed above.

A minimum of 44 quarter hours in course work taken in the professional departments.

The mathematics, physics, humanities, and social science requirements are identical with those in the regular program.



## **INDUSTRIAL ENGINEERING DEPARTMENT**

David R. Freeman, Ph.D., *Professor and Chairman*

### **FACULTY**

#### **Professor**

Austin W. Fisher, Jr., Sc.D.

#### **Assistant Professor**

Ronald Perry, Ph.D.

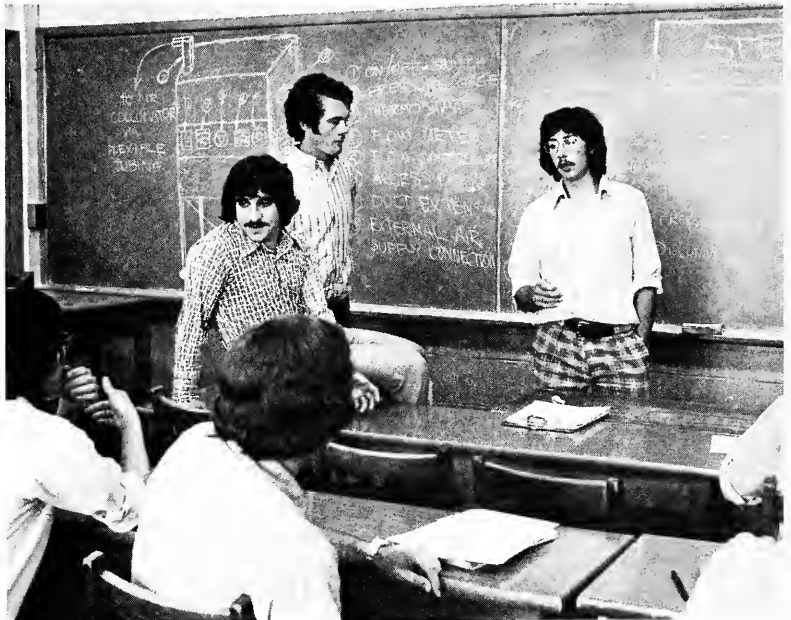
#### **Associate Professors**

Leonard P. Doyon, Ph.D.

Lewis H. Geyer, Ph.D.

Stewart V. Hoover, Ph.D.

Thomas E. Hulbert, M.S.



### **Professional Preparation**

#### *Aims*

Industrial engineers assist management in making decisions involving the utilization of men, materials, equipment, and energy to achieve the goals of an organization. Management needs factual information which defines the consequences of alternative decisions. The industrial engineer collects and analyzes this information and evaluates alternatives, thereby helping the manager to make the decision which best achieves a particular organizational goal. The scope of decisions may involve the entire organization, or some portion of it which is associated with a given product or service.

Traditionally, industrial engineers have been most widely employed in manufacturing organizations, but increasing numbers are now being utilized by service industries, such as the airlines, banks, hospitals, and local and federal government agencies. New courses recently introduced into the curriculum reflect the industrial engineer's interest in changing attitudes in society about computers, population growth, pollution, and the quality of life.

*Description of Major*

In performing problem analyses, the industrial engineer is concerned with complex, integrated man-machine systems. To treat the machine elements of the system, the industrial engineer requires knowledge of engineering fundamentals. In addition, he must have some background in the behavioral sciences to understand how the human elements of the system operate and how they relate to each other and the machines.

*A View of the  
Five-Year Major*

The extensive sequence in physics, mathematics, and engineering sciences in the program sharply differentiates an engineer's education from that of the student of business management.

The first two years will be devoted primarily to building a strong foundation through the study of mathematics, physics, English, chemistry, and the engineering sciences.

In the junior and senior years, more advanced subjects will be included. Among these are statistics, probability, operations research, quality control, computer science, management information systems, work design, personnel relations and plant layout.

**Five-Year B.S.-M.S. Program**

An accelerated program is available for honor students. It allows completion of the requirements for both B.S. and M.S. degrees in five years by overloads starting in the third year and the elimination of the senior co-op term.

**Special Information***Integrated Laboratory*

The new Industrial Engineering Laboratory is an integrated lab used for a variety of different courses. Directly associated with the lab classroom is the computer console room utilized in quite a variety of courses, the copying equipment for use in the plant layout courses, and the machine tool lab for use in work design and manufacturing courses. Students work as individuals or in groups, depending upon the scope and complexity of the project. Extensive laboratory project work is also conducted in outside industrial plants and service organizations on real problems. Students can view actual operations on occasional plant visits.

*The Computer*

Students are required to learn basic computer programming in their first year. In later years, they are asked to solve complex problems by computer. The University Computation Center provides a service to the student whereby he can leave his program at the Computation Center, have an expert run the program on a high-speed digital computer and, in a short time, pick up his results. The computer is of particular interest to the industrial engineer since many complex problems, such as assembly line balancing, mathematical modeling, and industrial simulations require a computer solution.

A human factors laboratory is used to perform experimentation in perception. The facility is used for demonstration and student projects.

The Sample Freshman-Year Program of Studies in the College of Engineering is the same for all majors in the College. See page 79.

**Basic Course Requirements****I. GENERAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
*Calculus	12	**Physics	4
*Physics	12	**Physics Lab.	2
*General Chemistry	8	**Economics I & II	8
*English	8	†Math Elective	4
*Basic Engineering	8	Public Speaking	3
**Calculus	8	L.A. Electives	20

**II. PROFESSIONAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
**Work Design	4	Personnel and Organizations	4
††**Engineering Science Elective	4	Engineering Economy and Statistical Decision Theory	4
**Probability Analysis	4	††Engineering Science Electives (4)	16
Statistics I & II	8	†††Technical Electives (5)	20
Industrial Cost Control	4		
Operations Research	8		
Systems Analysis I & II	8		

*\*These courses are usually taken in the Freshman Year.*

*\*\*These courses are usually taken in the Sophomore year.*

*†Differential Equations or suitable offering of Math Department with consent of the adviser.*

*††Five Engineering Science courses are required. They must include:*

Prin. of Computation and Programming I  
Strength of Materials B  
Electrical Engineering I

*The remaining courses may be selected from:*

Prin. of Computation and Programming II  
Electrical Engineering II  
Mechanics II  
Flow of Fluids  
Thermodynamics I  
Materials Science

*†††Five Technical Electives are required. Three must be Industrial Engineering Electives:*

Production Planning  
Facilities Design  
Quality Control  
Management Information Systems  
Digital Simulation  
World Dynamics  
Manufacturing Processes  
Human Factors  
Industrial Relations  
Human Considerations in Design

## MECHANICAL ENGINEERING DEPARTMENT

Welville B. Nowak, Ph.D., *George A. Snell Professor of Engineering, Chairman*

### FACULTY

#### Professors

John F. Dunn, Sc.D.  
Arthur R. Foster, M.Eng.  
Melvin Mark, Sc.D.  
John N. Rossettos, Ph.D.  
Joseph J. Zelinski, Ph.D.

#### Associate Professors

Ralph S. Blanchard, M.S.  
H. Frederick Bowman, Ph.D.  
John W. Cipolla, Jr., Ph.D.  
Bertram S. Long, M.E.  
Ernest E. Mills, M.S.  
Richard J. Murphy, Ph.D.  
Warren G. Nelson, Sc.D.  
Thomas E. Phalen, Jr., M.S.  
Alvin J. Yorra, M.S.  
John Zotos, Met.E.

#### Assistant Professor

T. A. Balasubramaniam, M.S.

#### Instructors

Thomas Basso, M.S.  
Abdel-Hamid Hamdi, M.S.  
Steven A. Miller, M.S.  
Erwin Perl, M.S.

### Professional Preparation

#### *Aims*

Mechanical Engineering is the branch of the science which is broadly concerned with energy, including its transformation from one form to another, its transmission, and its utilization. Mechanical engineers conceive, plan, design, and direct the manufacture, distribution, and operation of a wide variety of devices, machines, and systems—including complex man-machine systems—for energy conversion, environmental control, materials processing, transportation, materials handling, and other purposes.

Mechanical engineers are engaged in all the engineering functions, including creative design, applied research, development, production, and management. The field of mechanical engineering is broad, providing an excellent professional base for career choice and interdisciplinary activities.

#### *Description of Major*

The curriculum is designed to accommodate changing demands on the mechanical engineer by establishing a firm foundation in the basic sciences before the student directs his studies toward a chosen area of interest.

#### *A View of the Five-Year Major*

In the first three years, the student learns the basic sciences (mathematics, physics, and chemistry), the engineering sciences (mechanics, thermodynamics, fluid mechanics, and material science), and the humanities. As an upperclassman, he can elect to concentrate his studies in the areas of thermofluid engineering, mechanics and design, or materials science and engineering.



Thermofluid engineering is concerned with the properties and characteristics of the working fluid of machines. For example, the ability of an aircraft to fly depends upon the manner in which air flows over its lifting surfaces. The energy to run a turbine is extracted from the steam or combustion gases which pass through it. The engineer must understand and have a knowledge of the concepts of thermodynamics. The efficiency of a cooling tower depends upon the mechanisms by which fluids transfer heat to surfaces so the engineer must have a firm grasp of the principles of heat transfer.

Mechanics and design are based upon the fundamental scientific and mathematical tools which are utilized in the analysis of mechanical configurations as they evolve in the design of machines and power-producing devices. For example, the engineer in the area of mechanics and design will analyze and design plate and shell components for nuclear power plants and deep-sea oceanographic vessels or develop new methods for evaluating filamentary composite structures. In the modern machine tool industry, he will be concerned with computer control of machine tools; in the engine industry, he will analyze stresses in such components as turbine blades. To prepare for this, the upper-class student will elect such courses as Experimental Stress Analysis, Advanced Strength of Materials and Deformation of Solids, Vibrations, Numerical and Computer Methods in Engineering Analysis.

Materials science and engineering is concerned with relationships among the structure, composition, properties, and functions of materials and with control of the structure and composition to achieve desired properties. Only recently have engineers come to realize that an understanding of the principles of materials science enables them to design more creatively and with greater freedom than the traditional reference to handbooks. Examples of areas where mechanical engineers find materials properties a part of the basic design function are: manufacturing techniques, structures (vehicles, buildings), energy conversion, electronic devices (including computers), packaging, and prosthetic devices. Advanced courses are available for those mechanical engineers who desire further knowledge in the materials field.

#### *Five-Year B.S.—M.S. Program*

Honor Students may take an accelerated program. It allows completion of the requirements for both B.S. and M.S. degrees in five years by overloads starting at the third year and the elimination of the senior co-op term.

#### **Special Information**

##### *Mechanical Engineering Laboratories*

The laboratories in Mechanical Engineering contain equipment ranging from an electron microscope and ultrasonic measuring devices to pumps and weirs. Students working on thermofluids projects may use a Rover turbine, a Wankel engine, diesel engines, thermoelectric coolers and generators, and a supersonic wind tunnel, to name a few. Material science has research microscopes, various furnaces, a fluid-to-fluid extrusion press, x-ray diffraction equipment, electron microscope, etc. For the mechanics and design areas, vibrations, experimental stress analysis and materials testing facilities are provided.

### Computers

Twenty amplifier analog computers as well as time-sharing terminals give the laboratories both digital and analog capacity.

The Sample Freshman-Year Program of Studies in the College of Engineering is the same for all majors in the College. See page 79.

### Basic Course Requirements

#### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*English	8	**Physics	4
*General Chemistry	8	**Physics Lab.	2
*Basic Engineering	8	**Liberal Arts Electives (2)	8
*Calculus	12	Math. Analysis	8
*Physics	12	Liberal Arts Elective	4
**Calculus	8		

#### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Mechanics I & II	8	Measurement and Analysis	4
**Thermodynamics I	4	Fluid Mechanics	4
Thermodynamics II	4	Materials Science	5
Mechanics III & IV	8		

### Junior and Senior Years

There are twelve courses to be selected by Juniors and Seniors in addition to four Liberal Arts Electives. Nine of the 12 are subject to the following departmental restrictions:

#### I. Required Mechanical Engineering Courses (5 required)

- A. Mechanics Dynamics (required)
- B. Thermodynamics Heat Transfer (required)
- C. Materials (1 required) Mechanical Behavior of Materials Material Processing
- D. Design Either M.E. Design (Design Fundamentals prerequisite) or Engineering Design

#### II. Additional Mechanical Engineering Courses (4 required)

#### III. Electrical Engineering Course (1 required)

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.

## BIOMEDICAL ENGINEERING DEPARTMENT

Samuel Fine, M.D., *Professor and Chairman*

### Professional Preparation

#### *Aims*

Biomedical engineering is concerned with the scientific principles underlying the physical and biological sciences and their application to problems of biological and medical significance.

Biomedical engineers are engaged in both theoretical and experimental studies, either as independent investigators or as members of a research or development group. They characterize and determine the mechanism of action of natural and synthetic macromolecules, analyze the properties of blood, and investigate the structure and function of organ systems such as the nervous system, the respiratory system, the cardiovascular system and the endocrine system. They design, develop, market and apply transducers, cardiac pacemakers and defibrillators, heart assist systems, artificial kidneys and limbs, and diagnostic and therapeutic X-ray equipment. They are important members of the hospital health team.

There is no special curriculum in Biomedical Engineering. Several of the engineering disciplines in this catalog provide the engineer with a background in the physical sciences. The purpose of the Biomedical Engineering Department is to assist the engineering student from his freshman through his senior year in choosing courses in the biological sciences to complement those in the physical sciences and humanities taken in the standard engineering curriculum.

Courses will be chosen without prejudicing the student's obtaining a degree in his field of engineering specialization. In some cases, courses in the biological sciences can be taken as additional work during the student's career at the University. In other cases, courses in the biological sciences can be taken as electives in the standard engineering curriculum. The opportunity to take these courses is dependent on the student's interests, capabilities, and academic record. It is, of course, limited by possible schedule conflicts.

Students who wish to take an engineering program which includes biological sciences must contact the Biomedical Engineering Department on their arrival as freshmen at the University. This is important since biology is substituted in the first year for a portion of basic engineering.

Education in a program involving the physical and biological sciences provides a sound foundation for future studies toward a doctorate in medicine or dentistry, a career in biomedical engineering, or as an engineer in a hospital or governmental agency such as the Department of Health, Education and Welfare. Industrial organizations are seeking individuals with a strong background in engineering supplemented by a biological science education. Other career opportunities include public health, the psychological sciences, and the marine sciences.



## **GRAPHIC SCIENCE DEPARTMENT**

Wilfred P. Rule, M.S., *Professor and Chairman*

### **FACULTY**

#### **Associate Professors**

Franklyn K. Brown, M.Ed.  
Robert G. Finkenaur, M.S.  
Robert S. Lang, Ed.M.  
Kenneth S. Woodard, M.S.

#### **Assistant Professors**

James R. Maiellano, M.S.  
Robert Poe, Ph.D.

#### **Instructors**

Lawrence A. Bookman, M.S.  
Pamela Halpern, M.S.  
Nonna Lehmkuhl, M.Ed.

### **Professional Preparation**

#### *Aims*

The first responsibility of the Department of Graphic Science is to provide a comprehensive view of what engineering is all about. The student is confronted with several problems similar to those he will encounter during his professional career. Methods of problem solving and graphic representation of solution are emphasized so that the student will learn some of the ways engineers communicate through drawings and sketches. The role of an engineer as a creative designer is described by relatively large case studies that show the step-by-step solution to specially chosen problems that cut across several engineering disciplines.

The second major interest of the department lies in the area of computers. The department offers courses in FORTRAN, COBOL, SPSS, and other languages to the entire University community. Each of these courses is heavily involved in applications to show the diverse ways in which the power of the computer can be brought to bear on problems in such areas as engineering, social sciences, the humanities, and business.

Where possible, the students are instructed in the use of large discipline-oriented software packages that provide comprehensive and sophisticated problem algorithms but require a minimum amount of original programming to use.



# Lincoln College

William F. King, M.S., P.E., *Director, Associate  
Dean of Engineering*  
Jacob Wiren, M.S., P.E., *Assistant Director*  
Paul J. McNerney, B.A., *Assistant to the Director*

## **FACULTY Professor**

Israel Katz, M.S., *Engineering Technology*

## **Associate Professors**

Borah Kreimer, M.A., *Engineering Graphics*  
Ernest E. Mills, M.S., P.E., *Mechanical Engineering Technology*  
Louis J. Nardone, M.S., P.E., *Electrical Engineering Technology*  
Thomas E. Phalen, M.S., P.E., *Mechanical Engineering Technology*  
Kenneth S. Woodard, M.S., *Engineering Graphics*

## **Professional Preparation**

### *Aims*

Lincoln College offers programs in engineering technology. The courses of instruction prepare the graduate for activities closely allied to the field of engineering. Though they are concerned with the same general fields of engineering specialization, the programs concentrate on the applications of technology rather than its development.

Emphasis is placed on the rational processes in converting theories and ideas into practical techniques, procedures, and products, thus preparing students to enter the technological world as active participants whose mission is, simply stated, to get things done. The engineering technologist works with the professional engineer, scientist, medical doctor, supervisor, and craftsman in converting scientific knowledge and craftsmanship into products and techniques. Fundamentals are related to current practice, providing a supportive "why" for the practical "how." At the same time, study of the humanities and social sciences gives an opportunity for students to develop an awareness of the social, economic, and political influences that are part of the real world.

The structure of the Engineering Technology curriculum is based upon the dual need for relevant technical skills and the foundation for future growth. Engineering technology education can assist students to:

1. Understand the scientific principles that govern the current technology of the particular branch of engineering which they select;
2. Develop competence in the application of technology to problem-solving;
3. Communicate effectively the important implications of technological advancements;
4. Acquire the motivation for continued relevance in technical skills.

### *A View of the Five-Year Program*

Lincoln College offers five-year cooperative programs in Mechanical and Electrical Engineering Technology leading to the degree of Bachelor of Engineering Technology with specification according to the curriculum in which the student qualifies. The curricula effectively prepare students for employment in industry.

Since the first year of study is identical for all technology students, a firm choice of major may be delayed until spring. At this time, the choice of cooperative work assignments makes a decision mandatory. Freshman courses act as a foundation for upperclass studies which will develop a basic understanding of concepts in the technical application of the sciences. They will also introduce the student to the current technical hardware and its applications. About four-fifths of the upper-class program is devoted to scientific and technological study and about one-fifth to humanistic-social courses, with the aim of balancing technical proficiency with an appreciation for the non-technical aspects of society and culture. Cooperative work assignments during the upper-class years are most valuable in helping students to integrate the important elements of both a technical and a liberal education.

*Part-Time Program Offered  
During Evening Hours*

Lincoln College also offers seven-year curricula leading to the degree of Bachelor of Engineering Technology in the following areas:

- Civil Engineering Technology
- Mechanical Engineering Technology
- Mechanical-Structural Engineering Technology
- Electrical Engineering Technology
- Environmental Control Engineering Technology

Classes are held in the evenings and on Saturday mornings. For further information on admission to these programs, contact the Lincoln College office at 219 Hayden Hall.

**Graduation Requirements**

Candidates for the Bachelor of Engineering Technology degree must complete all of the prescribed work of the curriculum in which they seek to qualify. A total of approximately 180 quarter hours is required for the degree. Students who undertake the Cooperative Education Program must meet the requirements of the Department of Cooperative Education before they become eligible for their degrees.

No student transferring from another college or university is eligible to receive the degree until he has completed at least one academic year at Northeastern immediately preceding his graduation.

**Graduation with Honor**

Candidates who have attained superior grades in their academic work will be graduated with honors. Upon special vote of the faculty, a limited number of this group may be graduated with high honors or with highest honors. Students must have been in attendance at the University at least six quarters before they may become eligible for honors at graduation.

**Facilities**

— The Northeastern electrical engineering laboratories are patterned after a composite of typical industrial research and development laboratories. Boasting a wide variety of modern testing and measuring equipment, the laboratories are an excellent adjunct to the classroom. Here the student may simulate or fabricate devices or systems which have been studied in his lecture courses.

From light machinery and power equipment to microwave precision systems, students plan and pursue their projects in the laboratory. Four PDP8I Digital Equipment Computers are available in the

laboratories for direct programming or use in other laboratory experimentation. In addition, several varieties of microprocessors and associated equipment are used in student laboratories.

The Mechanical Engineering Department includes the following laboratories:

*Materials and Metallurgy Laboratories*—Equipped to treat the physical examination of materials and their structures. The equipment includes modern apparatus for vacuum melting technology, X-ray diffraction, and thermal expansion studies, two research metallographs, an electron microscope, and fluid-to-fluid extrusion press.

*Fluid and Gas Dynamics Laboratory*—Designed to study aerodynamic and hydrodynamic phenomena such as vortices, separation streamlines, and shock waves. Equipment includes an aerodynamalog, an axial flow fan, shock tube, subsonic wind tunnel, and a supersonic wind tunnel.

*Materials Testing and Stress Analysis Laboratories*—Equipped to handle both the destructive and nondestructive testing of materials, this laboratory has a 300,000-lb. Universal testing machine provided with an automatic electronic stress-strain recorder and high-temperature tensile test furnace. Stresses and strains may be determined experimentally by the use of strain gage, photoelastic, photostress, and brittle lacquer techniques.

Recent additions include vibration-testing units, and a fatigue-testing machine of 2,000-lb. capacity, and vibration-testing units.

*Heat Engineering Laboratories*—Include a refrigeration unit which may also operate as a heat pump; two solid injection diesel engines provided with a continuous oxygen analyzer, one equipped with a strain gage torque meter; a CFR fuels research engine equipped with a strain gage pressure transducer; a 60-h.p. Rover gas turbine with automatic controls and Froude dynamometer; apparatus for study of steam-to-water heat transfer, comparison of film versus dropwise condensation, heat transfer to a boiling liquid, and thermocouple recovery factor; a thermoelectric generator to study the direct conversion of heat into electrical energy; a thermoelectric-refrigeration test facility for development of single and multistage thermoelectric coolers; and a Curtis steam turbine and condenser.

*Automatic Control Laboratory*—Includes a feedback control system and analog computers for simulation of engineering problems, and fluid power testing units.

### *Computation Center*

The Northeastern University Computation Center is a support arm to the many computer-oriented curricula of the various departments throughout the University. The facility has recently been updated with the installation of a powerful Control Data 6000 series system with time-sharing capability. As the prime computation center as required by the curricula, the Center is used by the students in both the Electrical Engineering Technology and Mechanical Engineering Technology programs.





### **Aviation Technology**

Kenneth S. Woodard, M.S., *Professor and Adviser*

Lincoln College also offers a full-time program in Aviation Technology leading to the Associate Degree. This program is based at the Burlington Campus and flying may be done at Wiggins Airways at Norwood or the Comerford Flight School located in Bedford. The Pilot School is approved by the Federal Aviation Administration. Students having a strong interest in flying as an integral part of their careers should contact the Director of the College.

### **Women in Engineering Technology**

Many women enter the technology field each year. Both government and industry provide positions of responsibility for women technologists. Any young woman with technical or scientific interests should consider engineering technology as a career.

The Sample Freshman-Year Program of Studies in Lincoln College is the same for all majors in the College.

### **Sample Freshman-Year Program of Studies In Engineering Technology**

#### *First Quarter*

Algebra and Trig. I  
Physics I  
English/Writing  
Engineering Design Graphics I  
Prin. Computer Programming I

#### *Second Quarter*

Algebra and Trig. II  
Physics II  
English/Literature  
Engineering Design Graphics II  
Prin. Computer Programming II  
Physics Lab. I

#### *Third Quarter*

Calculus I  
Physics III  
English/Literature  
Engineering Design Graphics III  
Prin. Computer Programming III  
Physics Lab. II

*In addition to the above courses, a student may elect to take Basic ROTC.*

## **ELECTRICAL ENGINEERING TECHNOLOGY**

Louis J. Nardone, M.S., *Coordinator for Electrical Engineering  
Technology*

### **Professional Preparation**

#### *Aims*

Since the Bachelor of Engineering Technology (BET) program has been designed to provide trained people for ready assimilation by the engineering field, its main thrust is not aimed at preparing the student for direct admission to the graduate schools of engineering.

However, the BET program can be an avenue of admission to the College of Engineering via several options for the student who achieves above average grades. Students who desire to explore this possibility should contact their freshman adviser or the Director of Lincoln College. In most other cases, graduates of the BET program will be eligible for graduate programs, such as business, law, and education.

#### *Description of Major*

Electrical engineering technology deals with the design and operation of equipment and systems related to power, communications, data processing, and electrical control. Its major functions are:

1. The generation, transmission, and distribution of electrical energy for light and power purposes;
2. The development and production of equipment for telephone, radio, television, radar, and communication;
3. The design and construction of data-processing systems and analog or digital computers;
4. The application of electrical and electronic devices in the control of processes and manufacture.

#### *A View of the Five-Year Major*

Since electrical engineering technology derives many of its fundamentals from developments in the pure sciences, the program of study begins with basic courses in mathematics and physics. In addition, the freshman year includes literature and engineering graphics to aid in developing the student's self-expression.

In the upper-class years, courses are divided into five related sequences: circuits and systems, including feedback control; electromagnetic field theory and microwave devices; energy conversion, emphasizing electromagnetic devices; and laboratory work associated with all of the foregoing. Current practice is stressed.

In the senior year, electives are offered to insure that students acquire depth and specialization.

The Sample Freshman-Year Program of Studies in Lincoln College is the same for all majors in the College. See page 104.

**Basic Course Requirements****I. GENERAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
*Algebra and Trigonometry I & II	8	*Principles of Computer Programming I, II, III	6
*Calculus I	4	*Physics I, II, III	12
**Calculus A & B	8	**Physics IV	4
*English	12	*Physics Lab. I & II	2
Principles of Economics	4	**Liberal Arts Electives	8
*Engineering Design Graphics I, II, III	6	Liberal Arts Electives	12
		Technical Electives	26

**II. PROFESSIONAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
**Circuit Analysis I & II	8	Digital Computers	4
Circuit Analysis III & IV	8	Distributed Systems	4
**Physical Electronics	4	**Circuits Lab. I	2
Electronics I, II, III	12	Circuits Lab. II	2
Control Engineering I & II	8	Electronics Lab.	2
Engineering Analysis I & II	8	Advanced Electronics Lab. I, II, III	6
Energy Conversion	4		
Electrical Measurements	4		

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.

**MECHANICAL  
ENGINEERING  
TECHNOLOGY**

Ernest E. Mills, M.S., *Coordinator for Mechanical Engineering Technology*

**Professional Preparation***Aims*

The objectives of the program are the same as those listed for the Electrical Engineering Technology program.

*Description of Major*

Mechanical engineering technology deals with the use of machinery to harness power resources and perform useful work. In contrast to civil engineering, which deals primarily with static forces and structures, mechanical engineering is more concerned with the motion and kinetics of devices which are activated by hydraulic, electrical, mechanical, or thermodynamic forces. Major functions of the mechanical engineering technologist are:

1. Design and installation of all kinds of machinery, from pocket watches to the largest steel boring mills;
2. Development and production of engines and transport equipment (automobile, aircraft, ship, railway, etc.);
3. Construction and operation of furnaces and boilers, as well as heating and air-conditioning equipment, for the control of atmospheric and environmental conditions.

### A View of the Five-Year Major



Since machinery is predominantly the concern of the mechanical engineer, the program of study is designed to give considerable training in the principles underlying the design and operation of engines, power transmission devices, machine tools, and other machinery. This, of course, implies a thorough study of the physical laws concerning motion and transfer of energy. Applied mechanics, thermodynamics, and study of materials will occupy prominent places in the program.

These studies will thus provide a student with a broad foundation in those fundamental subjects essential to the understanding of current practice. In the junior and senior years, a student will have considerable elective choice and opportunity for specialization.

The Sample Freshman-Year Program of Studies in Lincoln College is the same for all majors in the College. See page 104.

### Basic Course Requirements

#### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Algebra and Trigonometry I & II	8	*Physics Lab. I & II	2
*Calculus I	4	*Engineering Design Graphics I, II, III	6
**Calculus A, B	8	*Principles of Computer Programming I, II, III	6
*English	12	Liberal Arts Electives	20
Principles of Economics	4	Technical Electives	20
*Physics I, II, III	12		

#### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
**Mechanics A, B	8	Mechanical Design	6
Mechanics C	4	Thermodynamics A, B, C, D	14
**Stress Analysis A	4	Fluid Mechanics A & B	6
Stress Analysis B	4	Nuclear Technology	4
**Materials	4	Mechanical Laboratory	6
Engineering Design	4	Heat Laboratory	4
Electricity and Electronics	4	Project Laboratory	4

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.

## College of Liberal Arts

Walter S. Jones, Ph.D., *Acting Dean*

Ruth H. Karp, M.A., *Associate Dean*

Robert H. Ketchum, Ph.D., *Associate Dean, Director of Graduate School of Arts and Sciences*

### Professional Preparation

#### *Aims*

Programs in the College of Liberal Arts are aimed at developing intellectual maturity, or an awareness of the world and the ability to cope with its problems effectively and creatively. The mastery of concepts and methods of a specific discipline—and the insight it provides into the intellectual process itself—is inherent in every departmentally and individually designed curriculum. Northeastern's Cooperative Plan enhances the value of this approach by providing the opportunity to test knowledge with experience. Ultimately, the College seeks to give the student a lifelong love of learning.

#### *A View of the Four-and Five-Year Programs*

Although a wide range of courses is offered, enabling each student to plan a college program in keeping with his own interests and aptitudes, a definite series of basic courses in each curriculum is recommended by the faculty. Each student is guided in the selection of courses by a faculty adviser. During the sophomore year, each student tentatively selects a major field of specialization and thereafter, unless he changes his major, becomes closely identified with that field, its faculty, and other students in the same concentration.

In addition to the selection of a major area of study, students who have completed or are completing the sophomore year of study will be eligible to select a "minor" from among those Liberal Arts departments which offer them. Many departments are in the process of developing such minors as this publication goes to press. For examples of minors, please refer to page 136, under Philosophy.

All students in the College of Liberal Arts are eligible to participate in the Cooperative Plan which provides gainful employment or experiential assignments. In all Liberal Arts majors, students may choose between the five-year Cooperative Plan and a four-year, full-time program.

Students in the College of Liberal Arts may earn a Bachelor of Arts or a Bachelor of Science degree. For either degree, the student is initially admitted to the College in one of two broad areas of study: — social sciences-humanities or sciences-mathematics.

Since the freshman-year program is different in each area, entrance requirements also vary.

All degree candidates must complete two quarters of Freshman English. They must also complete successfully the courses specified as required in their majors, and in addition, elective courses which bring the total number of quarter hours earned to 176. As part of their elective and required courses, all candidates for the Bachelor of Arts must include at least 40 quarter hours (10 courses) to meet



"distribution" requirements, and they must also satisfy a requirement for proficiency in a modern foreign language, as described under "Languages."

All course work offered in the College of Liberal Arts is identified as falling into one of three broad areas: humanities, social sciences, and science-mathematics. To satisfy distribution requirements, B.A. candidates must complete 40 quarter hours in the two areas outside of the major. For example, a major in History, which is considered a social science, must take 40 quarter hours in the science-mathematics and humanities areas, as identified below.

### **Humanities**

Art, Drama, Literature, Modern Languages (all courses except those elementary courses which are used to satisfy the language requirement), Music, Philosophy, Journalism, Speech.

### **Social Sciences**

Anthropology, Economics, History, Political Science, Psychology, Sociology.

### **Science and Mathematics**

Biology, Chemistry, Mathematics, Earth Sciences, Physics, Psychology (laboratory courses only). Note: A Psychology course may be used to meet requirements in only one distribution area.

To determine which distribution requirement a course meets, if selected from the interdisciplinary programs in Human Services or African-American Studies, students should consult a counselor in the dean's office.

### **Languages**

A candidate for the B.A. must attain a level of proficiency in a modern foreign language indicated by a passing grade in intermediate-level college courses or by meeting a comparable criterion. This requirement will be regarded as satisfied for students who earned an average grade of C or better in a full, four-year language sequence in secondary school and for students for whom English is a foreign language. Other students may satisfy the requirement by passing a proficiency examination. Students who have not met the requirement at matriculation will ordinarily take an intermediate-level course in the language presented for admission, but those with exceptionally weak preparation may be placed in a lower-level course for a quarter. Alternatively, a student may satisfy this requirement with two years (four quarters) of a new language.

### **Self-Planned Program**

#### *Independent Major*

A student may petition the Dean of the College to meet the requirements of the B.A. degree with an independent rather than a departmental major. The petition must include a proposed program which the student intends to follow. Based on the theme of his petition, he will be assigned to an appropriate faculty adviser. Requirements for the major should be discussed in advance with a counselor in the Dean's office.

### **Human Services**

An interdisciplinary program leading to the Bachelor of Arts is offered for students interested in careers in the Human Services. The Human Services major is designed to give the student a broad and com-



prehensive view of the needs of society and the variety of ways in which the individual may contribute toward meeting them. Involving the Colleges of Criminal Justice, Education, and Liberal Arts, this program prepares students for entry into a wide variety of social service occupations. For details of the program and professional possibilities see pages 166 and 167.

### **Placement Techniques**

During the last year students in all curricula may take Placement Techniques, a course designed to prepare them for placement in their chosen vocational or professional field. Under expert guidance, each student studies career opportunities, prepares a complete personnel record, and works out a plan for obtaining employment after graduation.

Students who undertake the Cooperative Education Program must meet the requirements of the Department of Cooperative Education before they become eligible for their degrees.

### **Honors Programs**

Each year, upon admission to the University, a small number of carefully chosen freshmen are invited to participate in the Honors Program. Selection is based on a student's academic promise as reflected in past achievement, strong recommendations from secondary schools, and high scores in College Entrance Examination Board tests.

Participation in the Honors Program is more than a mark of recognition. It allows flexibility in planning a course of study and permits the election of courses otherwise unavailable to freshmen. For example, Honors Freshmen meet the freshman English requirement with Honors English, a two-quarter program designed to encourage creative writing and literary analysis. They may choose one of the Honors Colloquia for full-course credit on a pass-fail basis, a privilege ordinarily accorded in the second or third year. The Colloquia are seminars on topics which change annually. Enrollment is strictly limited to provide the best atmosphere for the exchange of ideas and closer contact with faculty and students.

At the end of either the freshman or sophomore year, students with a sufficiently high average are notified of their eligibility to join the Honors Program whether or not they were Honors Freshmen. Sophomores and middlers who join are then free to enroll in a Colloquium of their choice.

Juniors and Seniors with a cum of 3.0, no I's or F's, and no grade below B in their major field are invited to do Honors work during three of their last four quarters. Departments design their own Honors programs which may involve seminars, independent study, or special research leading to a thesis. The program allows leeway for students to develop their special talents and interests, but it will be carefully supervised by the faculty adviser, after the Honors proposal is approved by the Honors Committee.

Students who successfully complete three quarters of Honors work are awarded Departmental Honors on graduation.

Further information is available at the Office of the Dean.

### **Preprofessional Advising**

#### *Premedical*

After deciding on his goal, a student preparing for a career in medicine, osteopathy, veterinary medicine, dentistry or other related

areas should arrange a brief interview with the chairperson of the Premedical Advisory Committee and with the Department of Graduate Placement Services, 132 United Realty Building, as soon as possible to learn about the minimal curricular requirements for admission to professional schools, and the scheduling of the required Medical College Admissions, Dental Aptitude, or other tests. These tests should be taken more than a year before the anticipated admission date.

#### *Combined Program with Professional Schools*

Students who have completed at least three-quarters of the work required for the baccalaureate degree at Northeastern University and are accepted into an approved professional school of medicine, osteopathy, veterinary medicine, or dentistry will be granted the Bachelor of Arts or Bachelor of Science degree at the end of the second year in professional school, provided at least two-thirds of the work for the baccalaureate degree has been earned in residence at Northeastern. The residence requirement at Northeastern University must have been completed immediately prior to entrance into the professional school. Under this plan, preprofessional students may reduce by one year the time ordinarily required for obtaining both degrees.

#### *Prelegal*

Students preparing for a career in law should arrange for an interview with the Prelegal Advisory Committee in the Department of Graduate Placement Services, 132 United Realty Building, to learn about general curricular requirements for admissions to schools of law, the scheduling of the required Law School Admission Tests, and the best times to take them.

#### *Note*

If they include the minimal number of courses required by the particular professional school, students aiming for admission to a school which provides training in a medical profession or the law may meet admissions requirements through a wide choice of majors. If at all uncertain about the appropriate major to select, such students should discuss program requirements with a counselor in the Dean's Office and a preprofessional adviser in the Department of Graduate Placement Services, 132 United Realty Building.

## **Graduation Requirements**

### *Degrees*

The College of Liberal Arts awards the Bachelor of Arts degree to qualified candidates who have completed one of the curricula outlined on the following pages.

The College of Liberal Arts offers the Bachelor of Science degree to candidates who meet the program requirements. Students should formally notify the dean's office of their intention to pursue the B.S. degree program if it is offered in their major.

#### *Quantitative*

Candidates for either degree, starting with those entering at any level in the Fall quarter of 1974, must successfully complete 176 quarter hours of credit. Those who entered earlier as freshmen or transfer students should discuss their total degree requirements with a counselor in the Dean's office.

*Qualitative*

A cumulative average grade of C is required for graduation.

*Residency*

Either the last three full quarters (a minimum of 12 courses) or at least 75 percent of the credit for the degree must be taken at Northeastern to satisfy the residency requirement.

**Graduation with Honors**

Candidates who have attained superior grades in their academic work will be graduated with honors. Upon special vote of the faculty, a limited number of this group may be graduated with high honors or with highest honors. Students must attend the University at least six quarters to become eligible for honors at graduation.

Transfer students who have completed at least three full quarters of course work (a minimum of 12 courses) at honors level in the College of Liberal Arts may be permitted to graduate with honors, provided that work completed at other institutions, when weighted and averaged in with Northeastern work, equals the University's level. The degree of honors posted on the Northeastern diploma and transcript, however, shall be no higher than the honors-level attained at the University.

**Accreditation**

All programs in the College of Liberal Arts are fully accredited by the New England Association of Schools and Colleges.

**The Freshman Program**

The full year's program for a freshman will consist of courses in five or six different subjects, depending on a student's intended major. Students take four courses each quarter—a total of 12 for the year.

Examples of six-subject programs are shown below; however, these are only two of many possible combinations of courses students may select in their first year.

**Sample Freshman-Year Programs of Studies in the College of Liberal Arts**

Following is a program that might be geared to majors in African-American Studies, Art History, Drama, Economics, English, History, Human Services, Journalism, Modern Languages, Philosophy, Political Science, Psychology, Sociology/Anthropology, and Speech Communication.

*First Quarter*  
Political Science  
Spanish  
Art  
Math

*Second Quarter*  
Art  
Spanish  
English  
Sociology

*Third Quarter*  
English  
Math  
Anthropology  
Political Science

☞ A sample program that might apply to majors in Biology, Chemistry, Geology, Mathematics, and Physics follows:\*

*First Quarter*  
Calculus I  
General Chemistry I  
English  
German

*Second Quarter*  
Calculus II  
Physics  
General Chemistry II  
German

*Third Quarter*  
Calculus III  
Analytical Chemistry  
English  
Sociology

Freshman students in the College of Liberal Arts have the opportunity to choose courses from the following subjects:

American History  
 Anthropology  
 Art  
 Astronomy  
 Economics  
 English  
 Foundations of Black Culture  
 French  
 Geography  
 Geology  
 German  
 Human Services  
 Italian

Music  
 Philosophy  
 Political Science  
 Psychology  
 Russian  
 Science and Black Society  
 Spanish  
 Sociology  
 Theatre  
 Western Civilization

In addition, separate courses, differing in focus and approach, are available in each of the following subjects listed below; one approach is designed for science-oriented students, others for social science- and humanities-oriented students.

Biology  
 Chemistry

Mathematics  
 Physics

*\*In addition to the above courses, a student may elect to take ROTC.*



## AFRICAN-AMERICAN STUDIES DEPARTMENT

Ramona H. Edelin, M.A., *Assistant Professor and Chairperson*  
 Dr. Stanlake Samkange, Ph.D., *Professor*  
 Dr. William D. McLaurin, Ph.D., *Associate Professor*  
 Holly M. Carter, M.A., *Instructor*  
 Daniel O. Nyangani, M.A., *Instructor*

### Professional Preparation

#### *Aims*

The goal of the program of African-American Studies is that of a liberal education anywhere and at Northeastern in particular: an enhanced appreciation of one's cultural heritage and the intellectual foundation for a rewarding career. Consistent with these goals, and appropriate to the University's avowed concern for the local community, the program of African-American Studies has as its central themes: 1) the cultural heritage and the societal problems peculiar to Americans of African descent, and 2) the preparation of black Americans for rewarding careers by supplementing traditional career-oriented courses in other programs with new courses that focus on career development specifically for black persons.

The first of these two themes is addressed as much to white students as to black, due to the fact that the traditional academic presentation of our Western culture has consistently been seriously narrowed and limited by the virtual exclusion of its African-American contributions and components. A truly liberal education should enable the student to appreciate the many distinct ways different individuals and peoples view the world. This can be accomplished academically by providing the intellectual opportunity for the sharpening of cross-cultural insights which, in turn, will serve to unite the human family by building greater human understanding, the foundation-stone of all knowledge.

To the extent that the black experience in America is, in part, a separate one, the non-black's ignorance of that part of our life and culture has in many ways helped to contribute to our nation's racial problems. The many young non-black people who sincerely want to contribute to the solving of these problems will have the opportunity to do so through this program which offers a far deeper study of black culture than previous curricula.

The second theme is based on the recognition that, although career doors are opening more widely to blacks, many of the old intercultural barriers to satisfaction and fulfillment in these careers still persist, while new barriers are perhaps forming as well. The future black professional can greatly benefit by the study of these intercultural problems as a meaningful supplement to the study of the subject matter area of the profession.

### *Description and A View of the*

#### *Major*

The major will lead to a B.A. or B.S. degree and may be completed in four or five years. Courses taken in the Department of African-American Studies will be credited toward degree requirements for all Liberal Arts students.



Students will be able to elect the major in African-American Studies at any time from the freshman to the middler year. With careful supervision from the student's counselor, programs of study which best suit the student's goals will be developed. Distribution and language requirements will also be provided for in this manner.

A student will be required to take Freshman English, Foundations of Black Culture I & II, Science and Black Society I & II, African-American History, African-American Literature, African Civilization I & II, Educational Issues for Black Americans, Black Community and Social Change, Contemporary Problems in Black Society, Economic Problems of Black Americans, a Field Seminar, and Directed Study for Senior Thesis.

Counselors will aid students in choosing recommended electives. A partial listing includes courses from such general categories as statistics, political science, sociology, psychology, or language arts, as well as specific electives, such as Third World Political Relations, The Black Novel, The Black Family, Seminar: Ellison/Wright, and Black Ideologies.



## ART DEPARTMENT

Robert L. Wells, M.A., *Professor and Chairman*

### FACULTY

#### Associate Professors

Samuel Bishop, M.A., M.F.A.

Ronald Davis, M.Ed.

Wheaton Holden, Ph.D.

Peter Serenyi, Ph.D.

#### Lecturers

Joyce Bezdek, M.F.A.

Stephen Elston, M.A.

### Professional Preparation

#### *Aims*

The Art Department aims to introduce all interested students to the various forms and styles of expression in the visual arts and offers a major in Art History.

#### *Description of Major*

Courses cover the evolution of architecture, sculpture, painting, graphic arts, photography, and film art with emphasis on styles, techniques, and cultural implications—some from prehistoric times to the present. Studio courses are also offered in areas of painting, drawing, graphic arts, photography, filmmaking, and animation filmmaking. Students will obtain a working knowledge of the structure of art, as well as preparation for graduate school and a career.

#### *A View of the Major*

For the student interested in majoring in Art History, members of the Department will offer individual guidance in the selection of courses best suited to individual goals.

Art History majors are required to include the two-part course in the History of Art, two studio courses, and ten Art History courses, one elective each in philosophy and music, and two courses in history.

The candidate for the Bachelor of Arts degree must also show proficiency in a foreign language through the collegiate intermediate level, or must take courses to reach that level. The Bachelor of Science program, which does not include a modern foreign language requirement, offers more concentration in the major area.

Graduates with a degree in Art History may enter related areas, such as museum work, or continue with preparation for careers as teachers, researchers, or writers.



## BIOLOGY DEPARTMENT

Henry O. Werntz, Ph.D., *Associate Professor and Chairman*

### FACULTY

#### Professors

Francis D. Crisley, Ph.D.  
Janis Z. Gabliks, D.D.S., Ph.D.  
Charles Gainor, Ph.D.  
Abdul-Karim Khudairi, Ph.D.  
Nathan W. Riser, Ph.D.  
Fred A. Rosenberg, Ph.D.

#### Associate Professors

Charles H. Ellis, Ph.D.  
Helen Lambert, Ph.D.  
Charles A. Meszoely, Ph.D.  
M. Patricia Morse, Ph.D.  
Joseph V. Pearincott, Ph.D.  
Ernest Ruber, Ph.D.

#### Assistant Professors

Paul G. Arnison, Ph.D.  
Kostia Bergman, Ph.D.  
William C. Hartner, Ph.D.  
Gwilym S. Jones, Ph.D.  
Dale F. Levering, Ph.D.  
John A. Patterson, Ph.D.  
Daniel C. Scheirer, Ph.D.  
Phyllis R. Strauss, Ph.D.

### Professional Preparation

#### Aims

The Biology major offers students a fundamental understanding of the organization and the processes of life, from the level of molecules and cells through the level of organs and organ systems to the level of populations, species, ecosystems and evolution. The major also provides the mathematical, chemical and physical background necessary to understand biology. Further, it trains students in practical scientific skills associated with each of these areas of study. Finally, it allows students to begin to specialize in a subdiscipline of biology.

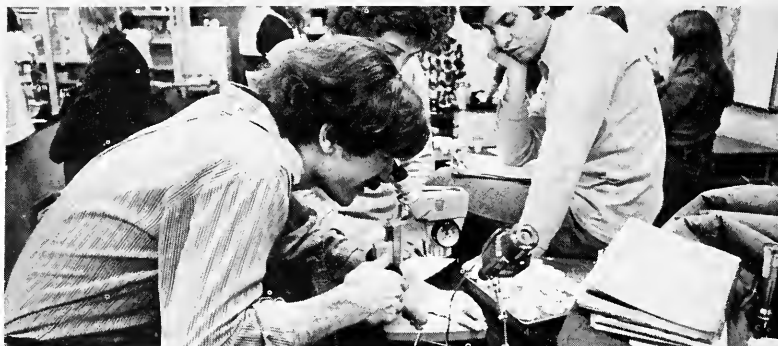
#### Description of Major

The major consists of ten biology courses in addition to those required in chemistry, physics, and mathematics. Six of the biology courses constitute a required core sequence: General Biology, Animal Biology, Plant Biology, Environmental and Population Biology, Genetics and Developmental Biology, and Cell Physiology and Biochemistry. A student normally should take the core before taking a required minimum of four upperclass biology electives. It is usually possible to follow the prescribed sequence if a student has decided on the major in the freshman or sophomore year. For students who may enter the major in the middle year, it is often possible to complete the major in the normal time by taking some of the electives concurrently with core requirements, providing they have previously taken freshman-level science and mathematics.

There are two programs within the Biology major, one leading to the Bachelor of Arts degree and the other to the Bachelor of Science degree. The B.A. program retains the Liberal Arts requirements in humanities and social sciences; the B.S. program is more rigorous and more extensive in its mathematics and science requirements and thus provides better preparation for post-graduate study. The difference is mainly one of emphasis, however, and it is possible for a student to meet both sets of requirements.

After completing the core program, students interested in independent research may arrange with individual faculty to undertake Di-





rected Study; if eligible, they may be invited to undertake a more extensive Honors Program involving up to four quarters of research.

The Department publishes a guide to required and recommended courses for the Biology major—*The Biology Undergraduate Advisory Handbook*—which students would do well to obtain as early as possible in their career at Northeastern. The handbook is available in the Biology Office, Room 403, Richards Hall.

#### *A View of the Major*

The Biology Major is excellent preparation for a wide variety of careers or professions in the life sciences, including medical, dental, and other health-related professions. Graduate study leading to a master's degree or doctorate can open careers in upper-level teaching and/or research in one of the specialized areas of biology, such as zoology, botany, microbiology, physiology, ecology, marine biology, cell biology, or biochemistry. Biology majors may also go into post-graduate training in such health-related areas as nutrition, public health, or medical technology.

Biology majors not wishing to enter either professional or graduate schools may find employment on technical levels in federal, state, industrial, hospital or university laboratories doing research, survey, or quality control in a biological area. They may enter directly into positions in industries involved in the manufacture and distribution of pharmaceuticals, biological products, food, or scientific equipment. Many biologists are employed at all levels in fisheries, forestry services, county agencies, museums, aquariums, research vessels, and marine stations.

Preprofessional students (for example, premedical or predental) are urged to consult with the preprofessional advisory committee early in their careers at Northeastern. *Students are cautioned that the successful completion of the required preprofessional courses by no means ensures admission to a professional school since the number of applicants usually far exceeds the space available.*

#### **Laboratories**

The Biology Department has specially equipped teaching laboratories for general biology, botany, anatomy, microbiology, microscopy, physiology, zoology, and cell biology. Equipment for field work, museum specimens, models, charts, and closed circuit television are employed in laboratory instruction. Additional facilities include aquarium and animal rooms, stockrooms, preparation rooms, research areas, and a large suburban greenhouse and woodlot. The Department has close association with the University's Marine Science Institute at Nahant and with the University's Electron Microscopy Center.

## CHEMISTRY DEPARTMENT

Karl Weiss, *Chairman*

John L. Roebber, *Executive Officer*

### FACULTY

#### Professors

Bill C. Giessen, Dr. Sc.Nat.

Barry L. Karger, Ph.D.

Robert A. Shepard, Ph.D.

Alfred Viola, Ph.D.

Karl Weiss, Ph.D.

#### Associate Professors

Geoffrey Davies, Ph.D.

David M. Howell, Ph.D.

Conrad M. Jankowski, Ph.D.

Elmer E. Jones, Ph.D.

Philip LeQuesne, Ph.D.

William M. Reiff, Ph.D.

John L. Roebber, Ph.D.

Efthalia J. Spinos, M.S.

Robert N. Wiener, Ph.D.

#### Assistant Professors

Thomas F. Brennan, Ph.D.

Thomas R. Copeland, Ph.D.

Arthur M. Halpern, Ph.D.

James E. Quick, Ph.D.

David Seitz, Ph.D.

#### Supervisor of Laboratories

Bernard J. Lemire, B.S.

### Professional Preparation

#### *Aims*

The educational objectives of the Chemistry Department are (1) to provide students with the intellectual stimulation of studying a physical science, (2) to impart a firm grasp of the basic principles and techniques which are central to a variety of chemistry-related careers, and (3) to prepare students for graduate study in chemistry. These objectives are implemented by the Department's highly research-oriented faculty, which consists of experts in various fields of the science.

#### *Description of Major*

Chemistry is concerned with the structure and properties of substances, and with the transformations they undergo. The boundaries between the classical areas of analytical, inorganic, organic, and physical chemistry are no longer distinct. Moreover, significant overlaps have developed between chemistry and the fields of biology, physics, mathematics, medicine, and engineering. These trends are reflected in the Chemistry Major programs at Northeastern.

Modern chemistry is the cornerstone for a large number of professions and industries. Challenging career opportunities exist in almost all technical fields in which functions such as research, development, production, sales, market analysis, quality control, and management are involved. The Chemistry Major programs provide excellent preparation for the study of medicine, dentistry, and veterinary medicine, and for advanced study in many fields of science. Additional benefits accrue to students by participation in the cooperative work program in chemistry. The practical experience gained in the field not only enhances employment prospects on graduation, but it also places chemistry in a more realistic perspective than does academic training alone.

#### *A View of the Major*

The Department offers two major programs which lead to the B.S and B.A. degrees, respectively. Both are normally based on the five-year cooperative study plan, but academically equivalent four-year study options are also available. The two degree curricula differ mainly in their traditional liberal arts content and advanced science course requirements. The Department has a committee of advisers who provide aid in choosing courses and other curricular matters for students at all levels.

The Chemistry Major programs at Northeastern are based on a novel, career-oriented concept. To provide basic training for a variety of careers, a core of rigorous basic chemistry and science courses is flexibly augmented with selected courses in other areas. These career options include:

Preprofessional Study (Medicine, Dentistry, Veterinary Medicine)

Teaching and Research via Graduate Study

Technical Employment in Industry

Geochemistry, Mineralogy, and Environmental Chemistry

Clinical Chemistry, Medicinal Chemistry, and Pharmaceutical Research

Chemical Sales and Management

Forensic Chemistry

The variety of careers open to persons with a strong background in chemistry is extensive, and other options can be constructed from the large number of courses offered at the University.

The core curriculum is common to all options. It consists of courses in English, calculus, physics and basic chemistry, which are taken in the freshman year. Students may be exempt from the General Chemistry courses by passing equivalency tests; in this case other courses are substituted. In the upper years, courses in Organic, Inorganic, Physical, and Analytical Chemistry are taken. For the B.S. degree, some additional advanced mathematics and science courses are required. German or Russian is strongly recommended for students who plan to pursue graduate study in the sciences.

Qualified students are encouraged to undertake a research project under the supervision of a faculty member. An honors program is open to especially able students.

### Accreditation

The Chemistry programs at Northeastern are approved by the American Chemical Society. The B.S. degree meets the society's requirements for certification.

### Facilities and Research

The main facilities of the Chemistry Department are housed in Hurtig Hall, a modern, air-conditioned, five-story building which contains equipment for up-to-date teaching and research. All faculty offices are located there, as is the James Flack Norris Room, which serves as a lounge for undergraduate chemistry majors. Additional research facilities are located in the Forsyth Building, (Photochemistry and Spectroscopy Laboratory), and in the Institute of Chemical Analysis, Applications, and Forensic Science. The Department's major research equipment includes electron microscopes, a mass spectrometer, lasers, X-ray diffractometers, nuclear magnetic resonance and electron spin resonance spectrometers, Gouy and Faraday magnetic balances, photoelectron and electron impact instrumentation, Mossbauer spectrometers, and a variety of ultraviolet and infrared spectrometers. Much of this equipment is available to undergraduates in advanced courses or working on research projects.

Active research programs exist in synthetic and mechanistic organic chemistry, natural products chemistry, inorganic chemistry, chemical oceanography, photochemistry and spectroscopy, separation science, and solid state chemistry.



## **DRAMA AND SPEECH DEPARTMENT**

Eugene J. Blackman, M.A., *Professor and Chairman*

### **FACULTY**

#### **Professor**

Mort S. Kaplan, M.A.

Jerrold A. Phillips, Ph.D.

Patricia H. Sankus, M.A.

Richard Schreiber, M.F.A.

#### **Associate Professors**

Carl W. Eastman, M.A.

Michael L. Woodnick, M.S.

#### **Instructor**

Gail F. Holbrook, M.A.

#### **Assistant Professors**

Marcia M. Littlefield, M.S.

John T. Marlier, Ph.D.

#### **Technical Director**

Peter N. Glynn, M.F.A.



### **DRAMA**

#### **Professional Preparation**

##### *Aims*

Theatre, one of the most ancient of all art forms, is still a moving force in our society because it uniquely involves the spectator to a degree unmatched by most creative and communicative arts.

At Northeastern, the student in drama can prepare for careers in educational and professional theatre, as well as acquire the background for advanced study at a graduate institution.

##### *Description of Major*

The undergraduate Drama major will be introduced to the total theatre experience, as well as its individual arts and crafts.

Theatre history, dramatic literature, playwriting, as well as acting, directing, technical production, scene design, lighting design, costume design, voice control, and stage movement are only some of the

areas covered in classroom courses. Theory will be tested in the theatre laboratories—the stages and their shops. The Drama majors are encouraged to express individual creative and interpretive impulses in courses, laboratory classes and the working crews and casts of productions. They will do so with an awareness of controlled technique. Advanced students will be urged to demonstrate abilities in independently organized but faculty-supervised projects in acting, playwriting, criticism, directing, and design.

### *A View of the Major*

It is recommended that Drama majors take a Physical Education *skill* course during each of the quarters in residence. The following courses, when available, are recommended: Modern Dance, Ballet, Jazz Dance, Tumbling, Gymnastics, Judo, Boxing, Wrestling, Fencing, Weight Training, Physical Conditioning, Exercise and Physical Control, and/or Swimming.

It is also recommended that the Drama major have at least a basic familiarity with the other creative arts as well as the basic humanities. When practicable, the major should take course work in the following areas outside the major field of concentration: music, art, philosophy, American and English literature.

The difference between the B.A. degree and the B.S. degree is one of flexibility and concentration. The B.S. degree allows the substitution of specialized field courses for the usual Liberal Arts distribution and language requirements.

However, there are minimum requirements for both degrees, with 60 quarter hours to be taken in the major area. Thirty-two quarter hours are to be taken in: History of the Theatre I & II, Voice and Articulation, Speech for the Theatre, Stagecraft, Practicum in Play Production, Acting I, and Directing I. Twenty-eight quarter hours are to be taken in *any* of the advanced Drama and Speech courses offered, some of which are: Make-Up, Acting II, III, Directing II, Stage Movement, Theatre Management, and Directed Studies for advanced students.

The theatre represents the major public laboratory to the Drama major, a place where theory is put into practice. All majors are expected to work in production each quarter in residence and fulfill a variety of crew assignments in construction, painting, sound, lighting, sewing, and ticket selling, as well as crew assignments for the running of a show—wardrobe, make-up, props, scene shifting, ushering, and house managing. Whenever possible, majors are expected to serve as stage managers and assistant stage managers. Appearing in a production is not a substitute for crew work and, when reasonably possible, all those concentrating in a performance aspect should also participate in crew activities.

A few places are kept available in upper-class performance courses for freshmen.

### **Accreditation**

Basic course work offered by this Department more than satisfies the minimum undergraduate requirements for a Drama degree as suggested by the American Theatre Association and prepares the student to take the Graduate Placement Examination in Theatre.



## **SPEECH COMMUNICATION**

### **Professional Preparation**

#### *Aims*

In the Speech Communication Major, the Department seeks to stimulate the personal and professional growth of the student through a study of the principles and methods of communication.

Courses are designed to give students an understanding of the communication processes and the role of communication in society. The speech communication program provides both theoretical and experiential learning to increase self awareness and personal development.

Classes are offered in the *Mass and the Media*, *Explorations in Communication*, *Interpersonal Communications*, *Oral Interpretation*, *Business and Professional Speaking*, and others.

The objectives for the Speech Communication Major are three-fold:

1. To stimulate the student's personal growth and development in perception and self-expression through the study of historical, contemporary, and artistic aspects of speech, and to provide organized knowledge and critical insight;
2. To prepare the student for professions which require both a theoretical and technical knowledge of communication, such as education, the law, government service, public relations, advertising, social service, industrial communications, and the arts;
3. To prepare the student for advanced graduate study in group and public communication, public address, oral interpretation, and speech education.

## **Professional Preparation**

#### *Overview*

Students may receive either a B.A. or a B.S. through a concentration in Group and Public Communication or Personal Performance.

It is recommended that the student interested in the Group and Public Communication concentration select elective courses that are appropriate to his/her area of interest in the Departments of Psychology, Sociology, Political Science, Philosophy, and English.

Students interested in the Personal Performance concentration should elect courses from the Departments of Drama, English, Education, and Philosophy.

## EARTH SCIENCES DEPARTMENT

Richard S. Naylor, Ph.D., *Associate Professor and Chairman*

### FACULTY

#### Associate Professors

Bernard L. Gordon, M.S.

David L. Wilmarth, Ph.D.

#### Assistant Professors

James R. Allen, Ph.D.

Richard H. Bailey, Ph.D.

William A. Newman, Ph.D.

Gerald D. Prager, Ph.D.

David S. Westerman, Ph.D.

### Professional Preparation

#### *Aims*

The Department of Earth Sciences offers a degree program in geology in the College of Liberal Arts as an in-depth study of a major area of the earth sciences, as well as courses in geology, geography, oceanography, and astronomy, which are available to all students.

#### *Description of Geology Major*

Geology is a broad-based science which deals with the study of the physical features, composition, history and processes of the earth. The manufacture of an enormous number of products composed of metals and petroleum derivatives is the basis of the economy of our society. The understanding of the origins of these natural resources and of how to assure their continued supply is one of the major roles of today's geologists. Only a small portion of the earth has been studied in detail, leaving many unexplored frontiers for each new graduate in the field.

#### *A View of the Major*

Since the study of geology also draws on information from the other physical sciences, students should complete basic courses in chemistry, physics, and mathematics along with Physical and Historical Geology during their first two years. After completing the introductory geology courses and one year of chemistry, every Geology major takes a three-course sequence—Descriptive Mineralogy, Optical Crystallography, and Optical Mineralogy. A knowledge of minerals is fundamental to geological understanding. In addition to the required introductory and mineralogy courses, the student chooses a minimum of six (for the B.A. degree) or eight (for the B.S. degree) additional geology courses. There are also electives required in the areas of the humanities and social sciences.

Each student is assigned to an adviser in the Department. The adviser assists the student in making appropriate course selections as his knowledge increases and special interests develop. Though not required, courses in petrology, structural geology, and paleontology are usually among the electives chosen by undergraduates.

During the junior and senior years, a student may select undergraduate research as one of his elective courses. Under the supervision of a faculty member, a problem is selected, defined, and researched. These projects give the undergraduate the opportunity to go much more deeply into some aspect of geology that holds particular interest for him/her. Students who meet the college re-



quirements for the honors program may also be invited to carry out an undergraduate research project.

### **Special Information**

#### *Field Trips*

Though much geology can be learned from textbooks and in the laboratory, a sound geological education must also include direct contact in the field. Whenever it is appropriate, field work, on an individual or group basis, will be part of individual courses. The Department also offers two extended field trips each year in the fall and spring quarters. These trips are usually three or four days in length to areas in the Northeast of particular geologic significance. Geology majors are expected to participate in these trips.

## **ECONOMICS DEPARTMENT**

Morris A. Horowitz, Ph.D., *Professor and Chairman*

### **FACULTY**

#### **Professors**

Harold M. Goldstein, Ph.D.  
Irwin L. Herrnsstadt, Ph.D.  
Sungwoo Kim, Ph.D.  
Peggy Musgrave, Ph.D.  
Gustav Schachter, Ph.D.  
Donald Shelby, Ph.D.

#### **Associate Professors**

Conrad P. Caligaris, Ph.D.  
Ernest M. DeCicco, Ph.D.  
Daryl Hellman, Ph.D.  
Pawan K. Sawhney, Ph.D.

#### **Assistant Professors**

Philip Abbott, Ph.D.  
Y. Lal Mahajan, Ph.D.  
Francis Mulvey, Ph.D.  
Joel Naroff, Ph.D.  
Andrew Sum, M.A.

#### **Instructors**

Robert Hankin, Ph.D.  
Charles Harrington, M.A.  
Bruce Kutnick, M.A.  
Edward Meehan, M.A.  
Donna Olszewski, M.A.  
Mohammed Rahman, M.A.  
John Silvia, M.A.  
Frank Tortora, M.A.  
Ralph Tryon, M.A.

### **Professional Preparation**

#### *Aims*

The aims of the economics program are to provide University graduates with a better understanding of how our economy and other economies function, to prepare students for graduate study in economics, and to develop specialists who are qualified to work as economists.

#### *Description of Major*

Economics is the study of the ways in which scarce resources, including human resources, are deployed to satisfy the material wants of individuals and society. Economists analyze the factors which determine the success or failure of this process.

Macroeconomics, which is concerned with the economy overall, deals with such problems as inflation, unemployment, growth and instability, and government monetary, fiscal, and regulatory policies. Microeconomics is concerned with the economic behavior of individuals, households, firms, and industries. It assesses the economic effect of racism, sexism, pollution, and environmental damage; it analyzes the economic aspects of natural resources, poverty, health, income distribution, trade unions, and collective bargaining.

Graduates are employed by businesses in such activities as industrial relations, planning and forecasting, determining plant locations, and making financial studies. They may become expert in analyzing consumer demand and developing and marketing new products. They may conduct research or teach, and/or provide specialized consulting services. Federal, state, local governments and trade unions are important sources of jobs for economists.

A graduate with an economics major, or a number of advanced courses, is not only better prepared for graduate programs in economics but may be better prepared, as well, for entry into schools of law and business.

#### *A View of the Major*

There is considerable flexibility in the economics program to enable the student to concentrate in the areas of his or her own interest. A student expecting to major in the field should take the problem-oriented Principles of Economics in the freshman or sophomore year to discover the range of insights economics can offer in analyzing and solving a variety of problems. Upper division courses apply theory to an in-depth study of a specific area of the field.

Other courses for the major include two quarters each of fundamentals of mathematics, economic statistics, and economic theory. In addition, the Department offers electives in all areas of economics, honors courses, reading courses, and a senior seminar.

The courses listed above are required for either the Bachelor of Arts or Bachelor of Science degree. However, the B.A. follows the liberal arts tradition in its distribution and language requirements; the Department of Economics requires other social science courses as well, plus six economics electives. The B.S. is a professionally oriented degree. In addition to social science electives, it requires ten economics electives and one course in quantitative methods.

The Department courses provide training in economic theory, money and banking, public finance, international trade, growth and development, industrial organization, comparative economic systems, economic history, environmental economics, economics of crime, urban problems, labor markets, collective bargaining, human resources, poverty and discrimination, and medical economics. In addition, tool courses, such as statistics, mathematical economics, econometrics, and quantitative methods are available. Other electives and readings courses permit a student to study an area in depth.

## ENGLISH DEPARTMENT

Gordon E. Pruett, Ph.D., *Associate Professor and Acting Chairman*

### FACULTY

#### Professors

Raymond E. Blois, Ph.D.  
Victor E. Howes, Ph.D.  
Samuel F. Morse, Ph.D.  
Robert B. Parker, Ph.D.  
Kinley E. Roby, Ph.D.  
Stanley Trachtenberg, Ph.D.  
Arthur J. Weitzman, Ph.D.  
Paul C. Wermuth, Ph.D.

#### Associate Professors

Samuel J. Bernstein, Ph.D.  
Robert J. Blanch, Ph.D.  
Francis C. Blessington, Ph.D.  
Irene Fairley, Ph.D.  
Gary Goshgarian, Ph.D.  
Gerald R. Griffin, Ph.D.  
M. X. Lesser, Ph.D.  
James E. Nagel, Ph.D.  
Jane A. Nelson, Ph.D.  
Lloyd A. Skiffington, Ph.D.  
Herbert L. Sussman, Ph.D.  
Joseph E. Westlund, Ph.D.

#### Assistant Professors

Candace Brook, Ph.D.  
E. Wallace Coyle, Ph.D.  
Timothy R. Donovan, Ph.D.  
Joseph Harwitz, Ph.D.  
Guy Rotella, Ph.D.

#### Instructors

William E. Biddle, M.A.  
Albert d'Amato, M.Ed.  
Gerald Griswold, M.A.  
Kelly Reed, M.A.  
Penelope Tzougros, A.M.  
Marilyn Wakstein, M.A.  
Michael West, M.A.

#### Lecturer

Joseph B. DeRoche, M.F.A.

### Professional Preparation

#### *Aims*

The English Department curriculum is diverse in its aims and flexible in its design. For the general University community, the curriculum offers possibilities in creative and expository writing, linguistics, and American, English, and foreign literature. For the preprofessional student—in law, medicine, business, or engineering—it offers a broad intellectual and cultural frame for specialist concerns. For the major in English, it offers substantial preparation for careers in teaching and research, advertising and publishing, radio and television—indeed, any field in which communication and judgment go hand-in-hand.

At a time when the price of imprecision in language is more than simple misunderstanding, and the cost of changing values more than personal uncertainty, the study of literature provides "a momentary stay against confusion." It deals with the hard edge of being, an insight into the ways of men and women, at once clear and complex. In fact, the very structure of literature gives shape and meaning to the often formless experiences of life. And it does so with grace and force. To put it another way, literature "tells it like it is," not statistically, not abstractly, but with the details of fully realized people in accessible worlds, "imaginary gardens with real toads in them."

#### *Description of Major*

There is flexibility enough in the curriculum requirements and its details to accommodate the pace and interest of a wide range of stu-

dents. After an initial introduction to the study of literature in the two-part survey and the poetry analysis course, a student is free to choose the order of required areas, whether it is Chaucer or Pope and Swift, the Romantic poets, or the contemporary ones. Members of the Department are available throughout the year to help and advise a student, but the critical choice of order is his. So, too, is the choice within areas. The American literature requirement, for example, is met by successfully completing any two courses in it. Among the current offerings are Major American Novels, The New England Renaissance, American Realism, American Romanticism, and African-American Literature. To this area, as to others, the Department regularly adds new courses and, hence, even more options.

#### *A View of the Major*



The curriculum for major concentration in English consists of 13 to 15 four-quarter-hour courses beyond the freshman level (depending on whether the student is working toward the B.A. or B.S.) distributed in the following way: a two-part survey of English literature; poetry analysis; Introduction to Linguistics or The History of the English Language; a course in each of three periods of English literature, Medieval, 18th century, and 19th century; Shakespeare; any two courses in American literature, and such electives as Creative Writing, Science Fiction, Images of Women in Literature, and The Novel of Violence. In addition, six seminars, limited to 15 senior students, are offered each year in subjects as varied as The Arthurian Legends, The Traveller in America, and Literature and Psychoanalysis. There are also opportunities for studies in language and literature, independent of formal course offerings. Student and instructor get together informally to pursue ideas of mutual and particular concern.

## **HISTORY DEPARTMENT**

Raymond H. Robinson, Ph.D., *Professor and Chairman*

### **FACULTY**

#### **Professors**

Philip N. Backstrom, Ph.D.  
Martha E. François, Ph.D.

#### **Associate Professors**

Charmarie Blaisdell, Ph.D.  
Ballard C. Campbell, Ph.D.  
William Fowler, Jr., Ph.D.  
Norbert L. Fullington, Ph.D.  
Donald M. Jacobs, Ph.D.  
John D. Post, Ph.D.  
Stanley R. Stembridge, Ph.D.

#### **Assistant Professors**

Gerald H. Herman, M.A.  
LaVerne Kuhnke, Ph.D.  
Clay McShane, Ph.D.  
Martin R. Ring, Ph.D.

#### **Lecturer**

Robert H. Ketchum, Ph.D.

### **Professional Preparation**

#### *Aims*

History's concern with man in his diverse and complex past provides excellent opportunity for the development of greater understanding and appreciation of today's culture and civilization. Traditionally, history has been a major of great appeal to men and women desiring a

broad base before they embark on careers in business, law, journalism, and government.

Other majors know that they want to work more directly in history. Some want to teach in public schools. They may elect education courses leading to certification by the state. (Those desiring jobs in private secondary schools need not be certified by state authorities.) Teaching positions in colleges and universities require master's, and increasingly, doctor's degrees. An undergraduate major in History facilitates entrance to graduate programs in the field. Ordinarily, college and university teachers of history spend part of their time in research and writing.

Not all professional historians teach and write. Many find pleasure and profit working in public archives, private historical societies, museums, and restoration projects. Their careers not only serve other professional historians but a larger public as well.

### *Description of Major*

For majors of such diverse interests and ambitions, curricula must combine sensible structure with flexibility. Majors in History at Northeastern may qualify for either a Bachelor of Arts or a Bachelor of Science degree. Since the B.A. requires a foreign language, it appeals to prospective candidates for graduate school where reading knowledge of foreign languages is necessary; the B.S. is designed for students desiring greater specialization in history and a social science orientation.

Candidates for both degrees are required to take the surveys in Western Civilization and American History, and The Historian's Craft, which focuses on methods, problems, and philosophies of historians. Beyond the basic courses are a wide range of offerings covering the political, economic, social, and cultural history of man in diverse times and places.

### *A View of the Major*

To assure a broad program of study, the College of Liberal Arts requires that students choose courses offered by departments outside the area of the major. At Northeastern University, history is classified as a social science; so History majors must complete 40 quarter hours of work in the humanities and science/mathematics (see page 109). Sixty quarter hours of history are required for the B.A. degree; 72 quarter hours for the B.S. degree.

The history requirements are broken into groups: Group A (Ancient, Medieval, and Early Modern Europe); Group B (Modern Europe); Group C (British North American Colonies and the United States); and Group D (Other Areas or Regions). A minimum of two courses (eight quarter hours) must be elected from each group.

Majors are also urged to avoid overspecialization at the undergraduate level. Though there are no maximum limits on the amount of history that may be taken, the Department advises broad course selection as the best policy for its majors. All majors are assigned to departmental advisers who offer counsel about the program. Students are urged to seek advice about history electives, about other electives, and about the Honors program.

All qualified History majors are urged to consider the Honors Program in History. Those accepted write honors theses under the direction of members of the Department. Students ordinarily register for honors courses in their last three quarters of enrollment, except for the summer quarter when honors courses are not usually offered.

## JOURNALISM DEPARTMENT

George A. Speers, M.Ed., M.S., *Associate Professor and Chairman*

### FACULTY

#### Assistant Professors

Caroline I. Ackerman, M.S.

William Kirtz, M.S.

#### Lecturer

Bob Eddy, M.A.

#### Instructors

Joseph Levine, J.D.

Robert B. Ruttenberg, A.B.

### Professional Preparation

#### *Aims*

In this modern world, it is evident that society relies increasingly on the mass media so that citizens may keep abreast of rapidly changing conditions all around them. It is the role of the journalist to observe, understand, analyze, explain, report, and interpret, as well as to provide leadership in ideas and information through the mass media's many outlets.

#### *Description of Major*

Many opportunities exist in the broad field of journalism. A Journalism major would be qualified for openings with daily and weekly newspapers, news departments of radio and television stations, news bureaus, wire services, general and specialized magazines, industrial journalism, public relations, publicity, and many other fields not directly related to mass media. A journalism education actually provides an excellent background for many nonmedia fields where the communications process is important.

#### *A View of the Major*

A journalist should have a broad background of liberal arts courses on the undergraduate level, and most university journalism programs have long recognized this need. The student should have some background and professional courses, but not to the point of overspecialization.

The generally accepted formula in Journalism for the bachelor's degree is a combination of approximately 75 percent liberal arts courses and 25 percent professional courses. This combination is preferred by most graduate schools of journalism, as well as leaders in the field.

In the freshman year at Northeastern, all courses are in the liberal arts. In each of the upper-class years the ideal arrangement is to take one journalism course each quarter, and in some quarters two, with three liberal arts courses in the humanities, social sciences, sciences, and mathematics.

Because journalism skills can be better expanded and understood with the aid of a laboratory, upper-class Journalism majors are encouraged to participate in the Cooperative Plan of Education. Co-op jobs with newspapers, radio and television stations, news bureaus, and public relations offices provide a laboratory experience. This is quite important to one who wishes to be part of the world of communications. In addition, such experience gives a student a major advan-



tage if he or she decides to seek admission to a graduate program in journalism.

Journalism majors enrolled in the B.A. program will take eight quarter hours in each of the following: U.S. History, other history electives, English literature, English electives, political science, and economics. General electives of approximately 40 quarter hours or ten courses are also required. (See page 109 for distribution and foreign language requirements.) Thirty-two quarter hours are required in the Fundamentals of Newswriting, Techniques of Journalism, History of the Principles of Journalism, and Press and Society.

Students selecting the B.S. program will also take the aforementioned courses but must include 24 quarter hours in mathematics, physics, biology, or other science courses. In this case, there is no foreign language requirement.

## **MATHEMATICS DEPARTMENT**

Maurice E. Gilmore, Ph.D., *Associate Professor and Chairman*

### **FACULTY**

#### **Professors**

Bohumil Cenk, Sc.D.  
David I. Epstein, Ph.D.  
Holland C. Filgo, Ph.D.  
Arshag B. Hajian, Ph.D.  
Robert D. Klein, M.S.  
Flavio B. Reis, Ph.D.  
Gabriel Stolzenberg, Ph.D.  
Harold L. Stubbs, Ph.D.,  
Robert G. Stone Professor  
of Mathematics  
Jack Warga, Ph.D.

#### **Associate Professors**

Roger M. Antoine, M.A.  
Shirley A. Blackett, M.Ed.  
Samuel J. Blank, Ph.D.  
Mark Bridger, Ph.D.  
Bruce Claflin, M.S.  
Ellen H. Dunlap, B.A.  
John Frampton, Ph.D.  
Alberto P. Galmarino, Ph.D.  
Samuel M. Giveen, M.A.  
Eugene Gover, Ph.D.  
Nancy Kopell, Ph.D.  
Richard A. Rasala, Ph.D.  
Thomas O. Sherman, Ph.D.  
Victor R. Staknis, Ph.D.  
Betty Stark, Ph.D.

#### **Assistant Professors**

Gail A. Carpenter, Ph.D.  
Daniel I. A. Cohen, Ph.D.  
Harriet Fell, Ph.D.  
Lev R. Ginzburg, Ph.D.  
Nishan Krikorian, Ph.D.  
Michael Perloff, M.S.  
Richard D. Porter, Ph.D.  
Jayant Shah, Ph.D.  
Brian Smith, Ph.D.

#### **Instructor**

John Casey, B.A.

### **Professional Preparation**

#### *Aims*

The Department aims to develop and expand the abilities of students interested in this exact science, one of the oldest and most basic of all the sciences.

### *Description of Major*

The Department offers two programs of studies in mathematics. One leads to a degree of Bachelor of Arts and requires a minimum of eleven mathematics courses. The foreign languages recommended are French, German, Italian, or Russian since there is more writing related to mathematics in these languages than in the others offered. The other program leads to a degree of Bachelor of Science and requires a minimum of fourteen mathematics courses but does not require the study of a foreign language.

### *A View of the Major*

All students must take a basic sequence of mathematics courses, and as a rule, it should be completed by the end of the sophomore year. It provides a working knowledge of the calculus of one and several variables, differential equations, some linear algebra, and numerical methods. With respect to the latter, while a computer programming course is not required, students will be encouraged, and eventually, expected to acquire the basic programming skills necessary for numerical solution of complex problems. An elementary programming course is available for this purpose.

### **Directed Study**

For highly motivated students, a freshman-sophomore directed study program (beginning in the winter of the freshman year) runs concurrently with the calculus sequence and provides an informal setting for independent research and intensive discussion of mathematical concepts and theories. Students interested in such a program should consult their calculus instructor.

Courses of directed study are also available for more advanced students. A transition from the basic sequence to more advanced parts of the curriculum is provided by Analysis I-II and Advanced Linear Algebra I. These courses are prerequisites for many advanced courses in applied analysis, complex analysis, topology, and foundations.

As a rule, students planning to take a substantial number of mathematics courses (e.g., two per quarter) should take these courses in the middler year. Students may wish to take a prerequisite for more advanced courses in algebra or one which includes linear, nonlinear, and dynamic programming, or both.

Courses in probability, statistics and numerical analysis may also be taken directly after the basic sequence.

Courses in systems programming generally require only a sufficient background in that field. Courses in computer science, such as computer organization, information structure, and compilers, generally require at least one quarter's experience in the field. More advanced training is available in some areas of computer science, such as artificial intelligence and combinatorial theory.

In the fourth and fifth years, students who have completed Analysis I-II and Advanced Linear Algebra I will have a variety of mathematics electives from which to choose. Some will wish to concentrate in one area such as algebra, analysis, topology, or applied mathematics, while others may prefer a more diversified program. Many of the upper-level courses, such as probability and complex analysis, reside in the common ground of "pure" and "applied" mathematics. Others, such as algebra and numerical analysis, are more specialized.

Students may wish to work out with their adviser a program of directed study and/or take first- and second-year graduate courses and seminars.



## MODERN LANGUAGES DEPARTMENT

Holbrook Robinson, *Assistant Professor and Acting Chairman*

### FACULTY Professors

Louis Cooperstein, M.A.  
Samuel Jaramillo, Ph.D.

### Associate Professors

Israel Aluf, Ph.D.  
Nazzareno F. Cedrone, Ph.D.  
Benedetto Fabrizi, D.M.L.  
Juliette Gilman, Ph.D.  
Charles E. Kitchin, M.A.  
Philip H. Stephan, Ph.D.  
Edward B. Williams, Ph.D.

### Assistant Professors

Lillian Bulwa, Ph.D.  
Bonnie McSorley, Ph.D.  
Robert B. Modee, M.A.  
Constance Rose, Ph.D.  
John Spiegel, M.A.  
Maryanne Vetterling, Ph.D.

### Instructors

Elizabeth Boehme, Ph.D.  
Anthony Ford, M.A.  
Anita D. Licis, M.A.

## Professional Preparation

### *Aims*

The study of Modern Languages can be of value to all students, regardless of their major field of interest. In the complex and rapid pace of modern life, there is a need for increased communication between varied and often divergent cultures, even those within the narrow confines of one's own community. To better understand and appreciate these cultures, it is very important to know the way in which the members of the culture think.

As the principal means of communication, language frequently offers the key to understanding. Thus language study may serve to help one achieve a more cosmopolitan, open-minded, and sensitive view of the world.

The Department offers background preparation for students interested in elementary, secondary school, or college teaching, international business relations, government service, journalism, library science, world affairs, travel, and more recently, community service (especially in Spanish-speaking areas).

The major in Modern Languages requires advanced courses in two languages and is available in French, German, Italian, Russian, or Spanish. Those who wish to teach in college must plan on graduate study.

### *Description of Major*

The freshman year is normally considered a year for general background. It will establish the foundation upon which the major will be formed. It is a year which should be utilized to fulfill as many general requirements as possible so that during the upper-class

years more time can be devoted to the major discipline.

Normally the study of the minor language would begin in the second year. However, in exceptional cases, this pattern may be altered to permit a student to begin his second language in the freshman year, or perhaps, postpone it to a later year. The Modern Language major should plan to take at least two language electives per quarter from the beginning of the second year. Again, of course, this pattern may be varied to fit the needs of the individual student.

It should be noted that the requirements indicated here for the major and minor languages are *minimum* requirements. When at all possible, a student is strongly encouraged to go beyond them, and even, perhaps, to pursue a third language.

#### *A View of the Major*

The Department offers a choice of either a Bachelor of Arts or a Bachelor of Science degree. In each case, the student is offered a choice of French, German, Italian, Russian, or Spanish. One of these languages will be selected as the major language, with a second as the minor. Both degrees require Freshman English.

The B.A. is, of course, the traditional degree for this discipline. A candidate for the B.A. must satisfy the college distribution requirements for graduation and, in addition, must meet the departmental requirements in his major. These requirements are: eight quarter hours in Western Civilization; eight additional quarter hours in history (any other history courses relevant to the major are acceptable); eight quarter hours of Survey of English Literature; a minimum of 32 quarter hours of advanced work in the major language and eight quarter hours of advanced work in the minor language. Advanced work may be defined as any course beyond the intermediate level of the language.

The Bachelor of Science degree in Modern Languages differs from the B.A. primarily in its emphasis. Whereas the B.A. requires that the student satisfy the distribution requirements of the College of Liberal Arts, the B.S. waives these requirements in favor of a much more concentrated program in the major area. Western Civilization, however, is still a required course.

In addition, the candidate must complete eight quarter hours of Composition and Conversation in the major language and eight quarter hours of Composition and Conversation in the minor language. He/she then must complete 40 additional quarter hours of advanced work in the major language and 16 additional quarter credits of advanced work in the minor.

#### *Additional Information*

In the basic language courses, attendance in the language laboratory is required for two half-hour sessions per week. The facilities of the language laboratory are also available on an optional basis for advanced work.

## **PHILOSOPHY AND RELIGION DEPARTMENT**

Stephen L. Nathanson, Ph.D., *Associate Professor and Chairman*

### **FACULTY**

#### **Professors**

Walter L. Fogg, Ph.D.  
Pavel Kovaly, Ph.D.

#### **Assistant Professor**

Michael R. Lipton, Ph.D.

#### **Associate Professors**

William J. DeAngelis, Ph.D.  
Edward A. Hacker, Ph.D.  
Stephen L. Nathanson, Ph.D.  
Gordon E. Pruett, Ph.D.  
Joseph H. Wellbank, Ph.D.

## **PHILOSOPHY**

### **Professional Preparation**

#### *Aims*

Philosophy deals with a wide range of questions and issues which have been generated by various aspects of human experience, by the beliefs and theories people hold, and by the practical problems human beings confront. Philosophy includes both questions and theories related to art, religion, morality, society, and natural and social sciences. Because of the breadth of its concerns, the study of philosophy provides a unique opportunity for students to examine and improve their beliefs in many areas through critical reflection.

Through readings, discussion, and writing, philosophy students encounter and examine questions concerning the nature and validity of religious beliefs, moral judgments, and scientific theories. Particular questions of values and social policy from areas such as law, medicine, and technology are dealt with critically and carefully. Through analysis of issues and evaluation of arguments, philosophical study can help students to reach an understanding of diverse sorts of knowledge and areas of controversy.

The program includes courses that strengthen the student's work in other areas and provide an understanding of the methods and traditions of philosophical and religious thought. Many select philosophy as a major to develop a broad background in the humanities or sharpen their critical abilities for graduate study not only in philosophy or religion, but also in law, history, political science, education, or literature. Indeed, former Philosophy majors can be found in most types of professional careers.

The student of religion seeks to understand man's religious experience both as individual response and within its social, historical, literary, and political context. Religions (Christian, Jewish, Hindu, etc.) are studied as well as the mythical and mystical dimensions of religious experience. The program strives to make clear the relationship between the religious experience and the other facets of human life with which the liberal arts are concerned. Courses are offered at introductory and intermediate levels. Although the program in religion does not offer a major, it does provide a comprehensive introduction to religious studies.

*Description of Major*

Northeastern's program for a Philosophy major is designed to provide a balanced understanding of the nature of philosophy and particular philosophical problems which arise in the various arts and sciences. A maximum number of electives has been provided so that a student may choose in accordance with his own background and interests. Students may pursue either a five-year co-op or a four-year, full-time course of study.

Although the Departmental requirements for the B.A. degree are the same as those for the B.S., those students taking the B.A. must meet the language and distribution requirements set by the College. All degree candidates in Philosophy must take at least eight quarter hours in English and 52 quarter hours in the Department, and must meet the following specific requirements: Classical Greek Philosophy and Modern Philosophy; Introduction to Logic or Symbolic Logic (the Department emphatically recommends that students contemplating graduate studies in Philosophy take Symbolic Logic); Theory of Knowledge or Metaphysics or Moral Philosophy; and at least one Seminar. The remaining 32 quarter hours are Philosophy electives, to be selected after consultation with the student's departmental adviser.

*Description of Minor*

To meet the needs of students majoring in other areas who have a special interest in Philosophy, the Department offers a Minor in Philosophy. The program contains the essential core of courses, as well as a great range of electives to accommodate individual interests.

To qualify for a minor in Philosophy, a student must take 28 quarter hours in the field. These will be distributed as follows:

- A. Introductory courses: Introduction to Philosophy I or Introduction to Philosophy II or Introduction to Scientific Method;
- B. History of Philosophy: Classical Greek Philosophy or Modern Philosophy;
- C. Logic: Introduction to Logic or Symbolic Logic;
- D. Electives: Any four courses in Philosophy of an advanced nature, i.e., any course numbered over 26.110.

## PHYSICS DEPARTMENT

Roy Weinstein, Ph.D., *Professor and Chairman*

### FACULTY Professors

Ronald Aaron, Ph.D.  
 Petros N. Argyres, Ph.D.  
 Richard L. Arnowitz, Ph.D.  
 Alan H. Cromer, Ph.D.  
 Marvin H. Friedman, Ph.D.  
 David A. Garelick, Ph.D.  
 Marvin W. Gettner, Ph.D.  
 Michael J. Glaubman, Ph.D.  
 Hyman Goldberg, Ph.D.  
 Bernard Gottschalk, Ph.D.  
 Walter Hauser, Ph.D.  
 Giovannin Lanza, Ph.D.  
 Bertram J. Malenka, Ph.D.  
 Pran Nath, Ph.D.  
 Clive H. Perry, Ph.D.  
 Eugene J. Saletan, Ph.D.  
 Carl A. Shiffman, Ph.D.  
 Yogi N. Srivastava, Ph.D.  
 Michael T. Vaughn, Ph.D.  
 Eberhard von Goeler, Ph.D.  
 Thomas H. Wallace, Ph.D.  
 Fa Yuch Wu, Ph.D.

### Associate Professors

Robert I. Boughton, Ph.D.  
 William L. Faissler, Ph.D.  
 Robert P. Lowndes, Ph.D.  
 James E. Neighbor, Ph.D.  
 Jeffrey B. Sokoloff, Ph.D.  
 Allan Widom, Ph.D.

### Assistant Professors

Arun Bansil, Ph.D.  
 David L. Johnson, Ph.D.  
 Michael L. Mallary, Ph.D.  
 Fernando D. Medina, Ph.D.

### Visiting Assistant Professor

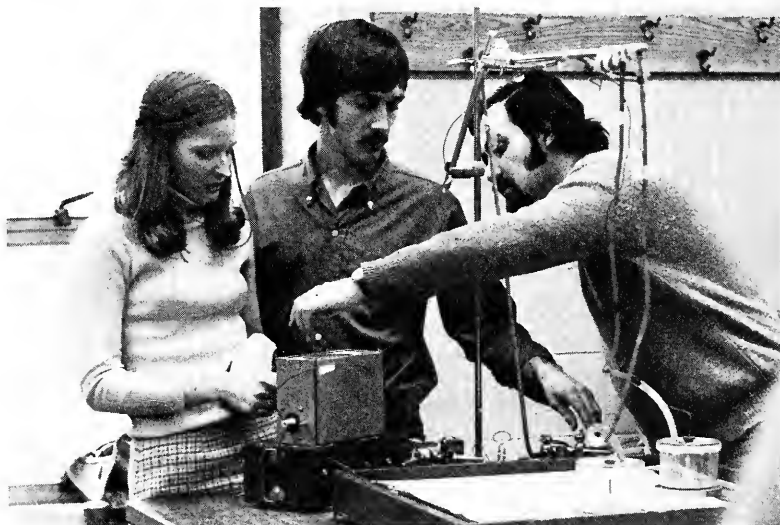
Ashok Rastogi, Ph.D.

### Professional Preparation

#### *Aims*

Physics is concerned with the fundamental principles which govern natural phenomena, ranging in scale from collisions of subatomic particles through the behavior of solids and liquids, to exploding stars and colliding galaxies. From these principles, we can also understand basic chemical and biological processes, as well as the operation of engines, solid-state electronic devices, lasers, and other tools of modern civilization.

The Physics Department offers undergraduate courses at four levels:



1. Descriptive courses intended primarily for nonscience majors with limited mathematical background;
2. General survey courses intended for students in scientific and engineering fields;
3. Advanced courses which focus on particular areas of physics; intended mainly, but not exclusively, for physics majors.
4. Highly advanced courses intended mainly, but not exclusively, for graduate students in Physics.

### *Description of Major*

Students who major in physics will have a wide variety of careers open to them. In addition to work in industrial or government laboratories in areas of applied physics, there are opportunities in allied fields such as biophysics, meteorology, oceanography, and the various branches of engineering. In such fields, and when new fields develop, the physicist is frequently at an advantage because of the emphasis on fundamental principles in a physics education.

A background in physics is also increasingly useful for those who wish to enter medicine, the law, or business.

A student majoring in physics can follow either a four-year, full-time program or a five-year, co-op program. Co-op jobs are available in many of the above fields, both in the Boston area and elsewhere.

Many graduates have gone on to earn advanced degrees in physics and related fields.

### *A View of the Major*

Physics majors may study for either the Bachelor of Arts or Bachelor of Science degree.

Candidates for the B.A. are required to pass three lecture courses and three laboratory courses in physics, and one course in mathematics, beyond the basic survey courses in physics and mathematics of the first two years. The College requirements in English, modern language, humanities, and social science must also be satisfied. This program is extremely flexible and allows the B.A. physics major to pursue other interests in depth.

Candidates for the B.S. must pass seven lecture courses and three laboratory courses in physics, two advanced courses in mathematics and five technical electives (courses in science or engineering) beyond the basic physics and mathematics courses. The B.S. program is appropriate for those students who wish to pursue graduate study in Physics.

The first-year program of all Physics majors includes a three-quarter physics course common to all science and math majors, and a three-quarter mathematics course. The remaining two courses each quarter can be chosen from a wide range of electives. Two-quarter courses in physics and mathematics and a physics laboratory course in Electronics and Data Analysis are required in the second year.

The upper-class lecture courses offered by the Department include Mechanics, Wave Motion and Optics, Thermodynamics, Electromagnetic Theory, Quantum Theory, Mathematical Physics, Nuclear Physics, Solid State Physics and Astrophysics. The upperclass laboratories include Wave Motion, Modern Physics, and Advanced Laboratory. These courses are taught by active researchers in Physics who have a strong commitment to teaching, and the classes are generally small (10-15 students).

There are special lectures for students sponsored by the Society of Physics Students, and the Physics Club, and reading courses on special topics in physics of interest to particular students.

Students interested in majoring in Physics should consult with one of the advisers in the Department as early as possible in their college careers to plan programs.

### *Honors Program and Undergraduate Research*

Students invited into the Honors Program may take graduate courses, reading courses, and special topics courses in the various research fields of the Department. Such work occasionally leads to presentation by the students of papers at professional meetings and to publication in journals.

## **POLITICAL SCIENCE DEPARTMENT**

David E. Schmitt, Ph.D., *Professor of Political Science and Acting  
Chairman*

### **FACULTY Professors**

Robert L. Cord, Ph.D.  
Walter S. Jones, Ph.D.  
R. Gregg Wilfong, Ph.D.

### **Associate Professors**

L. Gerald Bursey, Ph.D.  
Robert E. Gilbert, Ph.D.  
Minton F. Goldman, Ph.D.  
Steve Worth, Ph.D.

### **Assistant Professors**

Duane L. Grimes, M.A.  
Seth I. Hirshorn, Ph.D.  
Edward M. Humberger, Ph.D.  
Eileen McDonagh, Ph.D.  
Suzanne Ogden, Ph.D.

### **Professional Preparation**

#### *Aims*

Political science is concerned with the study of political institutions, the social and economic forces which shape them, the cultural context within which they operate, and with human behavior in political matters.

The Department of Political Science at Northeastern University has three objectives: (1) to educate within the framework of the best liberal arts tradition; (2) to heighten a student's awareness of political forces in the environment, and to sharpen his or her perception of a student's role as a citizen in a democratic society; and (3) to provide a solid academic foundation for those who elect political science, law, or public administration as a professional career.

#### *Description of Major*

For all students, the study of political science can be the gateway to a liberal education with its benefits of broadened interests, sharpened

sensibilities, and a quickened sense of civic responsibility. If one has a special interest in politics, studies in this field provide excellent preparation for governmental services, the study of law, the teaching of government and related subjects, or for a career in politics or public management.

For the student who wishes to pursue his/her professional studies at the graduate level, concentration in Political Science opens up many attractive opportunities. There are career opportunities in public management at the federal, state, or local government level while positions in research are available in government and university research bureaus. Teaching offers further career possibilities. The growth of specialized agencies in international bodies like the United Nations calls for the skills of the political scientist. Individuals with specialized training in political science are in demand also in some less obvious areas: in the public service programming of educational and commercial television, in journalism, and in legislative study and public relations activities with private associations.

The Department will give assistance as professional objectives are planned and will help to alert the student to professional opportunities and the means for taking the greatest advantage of them.

#### *A View of the Major*

A student may elect either the B.A. or the B.S. degree program. If he elects the B.A. program, he will have to meet the foreign language and distribution requirements of the College. If he elects the B.S., he will be required to take courses in quantitative analytical methods. However, either degree requires the following courses: eight quarter hours of Introduction to Political Science; four quarter hours each of the following: Conceptual Foundations of Political Analysis, Foreign Governments, International Relations, Public Administration, and Political Theory; 20 to 24 quarter hours of electives in Political Science, six electives (24 quarter hours) in the social sciences, with one course in at least three of the following: anthropology, economics, history, psychology, or sociology. The B.S. student is required to take four quarter hours each in Scope and Methods of Political Science, Quantitative Methods, and a Research Seminar. Courses in basic math and FORTRAN and FORGO are also recommended for B.S. students.

The B.S. program with a concentration in public administration provides a third option for the student. This program requires the completion of 40 hours of required courses in Introductory Political Science, American Government, Public Administration, Public Management, Personnel Administration, Quantitative Methods, and the use of computers. The student may also undertake a directed study project based on a cooperative work experience in a government agency. In addition, he must complete 24 hours of electives in the social sciences, at least eight of which should be Economics.



## PSYCHOLOGY DEPARTMENT

Harlan Lane, Ph.D., Doc. es Lettres, *Professor and Chairman*

### FACULTY Professors

John C. Armington, Ph.D.  
Helen S. Mahut, Ph.D.  
Bertram Scharf, Ph.D.  
Murray Sidman, Ph.D.  
Michael Terman, Ph.D.  
Harold S. Zamansky, Ph.D.

### Associate Professors

Edward A. Arees, Ph.D.  
Roger Brightbill, Ph.D.  
Perrin S. Cohen, Ph.D.  
Charles Karis, Ph.D.  
Harry Mackay, Ph.D.  
Alexander A. Skavenski, Ph.D.  
Lawrence Stoddard, Ph.D.

### Assistant Professors

Martin Block, Ph.D.  
Karen Geelen, Ph.D.  
Joanne Miller, Ph.D.  
Claude Sigel, Ph.D.

### Senior Research Associates

Robbin Battison, Ph.D.  
Leila R. Cohen, Ph.D.  
François Grosjean, Ph.D.  
Juan S. Terman, Ph.D.  
Stuart M. Zola, Ph.D.



### Professional Preparation

#### *Aims*

The undergraduate curriculum at Northeastern has been carefully designed to introduce students to the scientific underpinnings of modern psychology and enable a sophisticated choice among opportunities for advanced work.

The field of psychology, broadly defined as the science of behavior, has grown so rapidly that students aiming for careers in the field must almost always anticipate advanced study in specialized areas beyond the bachelor's degree. The diversity of academic and professional activities which we label "psychology" today may be seen in the following sampling of divisions of the American Psychological Association: *teaching, experimental, evaluation and measurement, physiological and comparative, developmental, personality and social, social issues, arts, clinical, consulting, industrial, educational, school, counseling, public service, military, adult development and aging, engineering, disability, consumer, philosophical, experimental*

*analysis of behavior, history, community, psychopharmacology, psychotherapy, hypnosis.* Thus, undergraduates preparing to be psychologists, or those who just want to learn more about the field, have set quite a goal for themselves!

### *Description of Major*

Our courses are not merely aimed at preparing students for advanced training. They also reflect the personal and social concerns of today's undergraduates. For example, psychology has recently produced a new and powerful understanding of the way environmental and physiological factors affect man's behavior. It has developed a technology whose methods have already profoundly transformed both individuals and society.

How do we evaluate this science and its technology? How do we ensure that researchers in psychology are free to investigate fully, and that the technology is applied humanely to create a better life for all people?

These are only a few of the questions Northeastern undergraduates will be asking as they progress through a newly designed curriculum which gives opportunities for laboratory practice and experimentation, field experiences in behavior technology, and small-group seminars to encourage critical and creative evaluation of psychology's accomplishments and its future.

Psychology explores many topics such as the function of the brain in determining behavior; how we see, hear, and learn; what behavioral science can offer in the problem areas of mental retardation, personality problems, infancy and old age; how we might suggest social changes based on laboratory data to increase men and women's accomplishments and satisfactions in the modern world.

### *A View of the Major*

Since modern psychology is multidisciplinary, both B.A. and B.S. programs include distribution requirements in allied sciences to fulfill the need for wide exposure to varying techniques of scientific practice and interpretation. The sequence of elementary courses in the Department relies heavily on the personalized system of instruction, which allows students to progress at their own pace. Thus, the Northeastern Psychology program has a flavor of "independent study" about it, beginning as early as the freshman year. Students find this system flexible in terms of their needs and interests, as well as an intellectual challenge which requires a commitment to study mastery of course material.

The Bachelor of Science program is usually recommended for students with a strong scientific or professional interest, who may ultimately consider applying to graduate schools in psychology, medicine, or environmental science. Final choice of the B.A. or B.S. should be made only after a personal consultation with a Psychology faculty adviser. B.A. candidates must complete at least 16 quarter hours of math and/or science courses (biology, chemistry, or physics); B.S. candidates, 24 quarter hours, including Physics for Psychology I and II. Lab courses are recommended; courses geared specifically to humanities students are not. With B.S. students, the faculty recommends taking both a math and science sequence in the freshman year. The choice of Fundamentals of Math or Calculus depends on a student's readiness to enter a course with calculus content.

Foundations of Psychology I & II are part of a special group of "self-paced" psychology courses. Students receive a carefully structured

sequence of study units, frequent progress evaluations, one-to-one tutorials, and optional small-group discussions. We call this group of courses a personalized system, since: (a) study is at a flexible pace which best fits students' needs; (b) individual tutorial assistance for any study problem is available, even if it is unique to one student; and (c) the assignments are structured to help achieve mastery of the course material so that every student can aim for the grade of A.

Students who receive the grade of A in a self-paced course may apply for a Teaching Practicum for elective credit in which they learn how to give tutorials and solve study problems for the benefit of other students in a course they themselves have mastered. Many students consider this opportunity an invaluable adjunct to standard course experiences. Their own study habits improve as a result, they delve more deeply into course content, they become more sophisticated as psychologists, and they come to the view that a goal for students in a modern university includes the sharing and transmission of knowledge among peers. The Practicum includes a series of seminar discussions on teaching problems and techniques.

Advanced undergraduate courses common to both degrees are Learning & Motivation, Perception, Physiological Basis of Psychology I, Personality, and the Psychology of Language. Students may choose laboratory courses in Psychology from the following list: Experimental Personality, Cognition Laboratory, Sensation and Perception Laboratory, Learning Laboratory, Applied Behavior Modification (at the Walter E. Fernald State School in Waltham), Practicum in Physiological Psychology, and Psychology of Language Laboratory. In addition, qualified students may participate in the Department's Directed Studies Program where, under the direction of a faculty member, students engage in the ongoing research projects in the various laboratories of the Department.

Freshmen are invited to attend the Freshman Roundtable offered each quarter. Every week, a different faculty member speaks about his current research specialty and conducts a laboratory visit. In the past, students have found this experience to be both interesting and informative. They have also said that it has helped them choose their field of study.

Classroom learning and tutorial instruction are complemented by laboratory research in the Psychology Department, where the student can learn by doing.

### Research Laboratories

The student who enrolls in laboratory courses and directed study courses will take advantage of the Department's resources for research which include: (a) in the field of learning, behavior laboratories for research with humans, monkeys, rats, and pigeons; and, in collaboration with the Walter E. Fernald State School, an instructional setting for research and training in behavior modification with retarded children and adults; (b) in neuropsychology and ethology, primate and rodent surgeries in neuroanatomical and histological laboratories, with apparatus for stimulating and recording activities of the brain; (c) in the psychology of vision and hearing, specialized enclosures and equipment for presenting visual and auditory stimuli and for measuring responses of the eye and the ear, including on-line computers; (d) in language and cognition, audio and video recording facilities and a computer for control of stimulus and response variables; and (e) in the field of personality, darkrooms, tachistoscopes and an eye-movement camera.



## SOCIOLOGY AND ANTHROPOLOGY DEPARTMENT

Ronald J. McAllister, Ph.D., *Associate Professor and Chairman*

### FACULTY

#### Professors

Morris Freilich, Ph.D.  
Blanche Geer, Ph.D.  
Elliott A. Krause, Ph.D.  
Frank F. Lee, Ph.D.  
Morton Rubin, Ph.D.  
Earl Rubington, Ph.D.

#### Associate Professors

Patricia Golden, Ph.D.  
Lila Leibowitz, Ph.D.  
Jack Levin, Ph.D.  
Carol A. Owen, Ph.D.

#### Assistant Professors

Arnold Arluke, Ph.D.  
Richard Bourne, Ph.D.  
Marcia Bystryk, Ph.D.  
Deborah David, Ph.D.  
C. Paul Dredge, Ph.D.  
William N. Greenbaum, Ed.D.  
Freddie Hill, Ph.D.  
Wilfred Holton, Ph.D.  
Debra Kaufman, Ph.D.  
Thomas Koenig, Ph.D.  
Marlene MacLeish, Ed.D.  
John Smetanka, Ph.D.

### Professional Preparation

#### *Aims*

The Department seeks a better understanding of the societies and social arrangements in which human beings live and die: how societies function and change, and how individuals, groups, and institutions interact.

#### *Description of Major*

A major in this Department provides a background for a wide spectrum of careers in public or private service, as well as specific preprofessional training.

Students may concentrate in sociology and anthropology, or both. Students who wish to do both must design a program of their own with the help of an adviser. Those enrolled in premedical, prelegal, paramedical and a variety of other preprofessional programs should find that sociology and anthropology courses provide a useful background.

#### *A View of the Major*

Majors may follow either a four-year program or the five-year cooperative course of study. Cooperative work assignments vary from placement in mental hospitals and social agencies to placement in university, government, and other research and policy-making settings. Transfers between the four-year and the five-year program should go smoothly, and registration in either is not an irreversible decision.

The department offers both a Bachelor of Arts and a Bachelor of Science degree. The requirements for each degree, both in sociology and in anthropology, are outlined below. A student with special educational goals may, of course, take more departmental electives than are required. A strong background in sociology-anthropology can be beneficial in a number of applied areas. B.A. students may wish to look at the concentration requirements for B.S. students and consult their advisers for assistance in planning programs with specialized goals.

The Department offers a B.S. with concentrations in Anthropology or Sociology. Students electing this option must fulfill all of the departmental requirements for the B.A. degree, and must take a coherent program involving additional course work as outlined below. Specializations either involve more intensive study within a concentration or are interdisciplinary.

## ANTHROPOLOGY

B.A. students in Anthropology must take at least 48 quarter hours in departmental courses, including 40 in Anthropology and eight in Sociology. The exact distribution can be arranged. Minimum requirements are as follows:

- A. Preparatory—Introduction to Anthropology and Introduction to Sociology. (Prospective majors with equivalent background may be exempted. A student should consult a departmental adviser.)
- B. Core Requirements—at least three of the following, as available: Language and Culture; Individual and Culture; Human Origins; Myth and Religion; Sex, Sex Roles, and Family; Culture in Transition; Tribal Societies and Culture; and Peasant Society and Culture.
- C. Electives—Students must take at least six additional electives in Anthropology and at least one additional in Sociology. Qualified students are encouraged to take relevant graduate courses with the consent of the instructor. Majors should consult their advisers freely since courses elsewhere in the University may round out a special interest or focus.
- D. Nondepartmental Requirements—Six courses from the following social sciences: African-American Studies, Economics, History, Political Science, and Psychology.

B.S. students in Anthropology take the same basic core of courses and, in addition, an individually designed specialization in an area of interest consisting of at least five courses. A student *must* confer with an adviser who will help develop such a program, place it on record, and supervise it. Interdepartmental and interdisciplinary specializations can be arranged in such areas as linguistics, Native American Studies, biological anthropology, psychological anthropology, or area studies focusing on Latin America, Africa, Asia, and the Middle East.



## SOCIOLOGY

B.A. students in Sociology must take at least 52 quarter hours in departmental courses, including 44 in Sociology and eight in Anthropology, and must meet the following minimum requirements:

- A. Preparatory—Introduction to Anthropology and Introduction to Sociology. (Prospective majors with equivalent background may be exempted. A student should check with the Department.)
- B. Core Requirements—Statistical Analysis; Research Methods I; Research Methods II; Social Theory I; Social Theory II; Class, Power, and Social Change.
- C. Electives—The following are minimum requirements: two intermediate courses (at 100 level); two advanced courses (at 200 level); and one intermediate or advanced Anthropology course. With the consent of the adviser, qualified students are encouraged to take certain graduate and directed study courses and/or the Senior Majors Seminar.
- D. Nondepartmental Requirements—Six courses from the following social sciences: African-American Studies, Economics, History, Political Science, and Psychology.

B.S. students in Sociology take the same basic core of courses and, in addition, an individually designed specialization in an area of interest consisting of at least six courses, three from within and three outside the department. A student *must* confer with an adviser who will help develop such a program, place it on record, and supervise it. Specializations can be arranged focusing on social welfare, health services, political studies, urban studies, education and society, ethnic studies, and organizational studies. There are, of course, many other areas of specialization and possible combinations of courses. Following are a few examples. (Courses in the Department of Sociology/Anthropology are indicated by an asterisk.):

#### SOCIAL WELFARE

- \*Sociology of Poverty
- \*Social Policy and Social Intervention
- \*Human Services Organization
- \*Sociological Issues in Welfare
  - Social Welfare Problems
  - Politics of Poverty
  - Poverty and Discrimination

#### HEALTH SERVICES

- \*Medical Sociology
- \*Death and Dying
- \*Health Care as a Social Issue
- \*Culture and Mental Illness
  - Medical Economics
  - Community Medicine and the Delivery of Health Care
  - Human Services Administration

#### URBAN STUDIES

- \*Urban Society
- \*Community Analysis
- \*Seminar in Urban Studies
  - Urban and Metropolitan Government
  - Urban Economics
  - Urban Geography
  - American Urban History

#### LAW AND SOCIETY

- \*Crime, Conflict, and Justice
- \*Sociological Theories of Crime
- \*Social Policy and Social Intervention
  - Civil Liberties
  - Law and Society
  - The Economics of Crime
  - The Politics of the Criminal Justice System

#### SEX ROLES AND FAMILY

- \*Sex, Sex Roles, and Family
- \*Sociology of the Family
- \*Kinship and Society
- \*Changing Sex Roles
  - Sex Roles in American Politics
  - Women in History
  - Politics of the Black Family

**ORGANIZATIONAL STUDIES**

- \*Sociology of Business and Industry
- \*Administration and Formal Organization
- \*Social Policy and Social Intervention
- \*Human Services Organization
- Organization Theory I
- Industrial Organization and Public Policy
- People in Organizations

*\*These are just samples of approaches to these particular areas; there are many other possible combinations of courses. There are many other areas of specialization.*

**MUSIC DEPARTMENT**

Roland Nadeau, M.M., *Professor and Chairman*

**FACULTY****Professors**

Herbert Silverman, Ed.D.  
 Leo Snyder, M.M.  
 William Tesson, M.M.

**Assistant Professor**

Joshua Jacobson, M.M.

**Lecturer**

James R. Mitchell, M.A.

**Associate Professors**

Reginald Haché, A.D.  
 Robin M. Hendrich, L.R.A.M.  
 Helen Keaney, M.M.  
 David Sonnenschein, D.M.A.

**Aims**

The Department of Music offers a comprehensive number of courses for students with an interest in or desire to learn about music. The Department serves the musical and cultural needs of the University and its various Colleges. It aims to provide a wide range of musical experiences for students and the University community with emphasis on the aesthetic aspects of intelligent listening to and learning about our musical heritage.

Department of Music courses fall within several categories: Basic Music Theory, Historical Periods and National Styles, Individual Composers and Their Music, The Forms of Music, and Basic Appreciation (overview).

In addition, faculty direct student performance organizations, such as, the Early Music Players, the N.U. Choral Society, the N.U. Symphony Orchestra, and the N.U. Bands.

Students from these performance groups, the music faculty, and artists from the community at large participate in a program of over 60 concerts per year. Most of these concerts are free and open to the public.

## College of Nursing

Juanita O. Long, R.N., M.S.N., C.A.G.S., *Dean*

Mary E. Gonyow, R.N., M.A., *Assistant Dean*

### FACULTY

#### Associate Professors

Jane Aroian, R.N., M.S.N.  
 Olivia M. Breton, R.N., M.Ed.  
 Janet Carroll, R.N., M.S.  
 Ellen T. Daly, R.N., M.S.N.  
 Flora M. DeScenza, R.N., M.S.  
 Jean P. Gilbert, R.N., M.S.N.  
 O. Barbara Goodfellow, R.N., M.S.N.  
 Marjorie P. Johns, R.N., M.S.  
 Mary P. A. Kane, R.N., M.S.N.  
 Mary C. Keaney, R.N., M.S.N.  
 M. Paula Kelley, R.N., M.S.  
 Jane M. Lee, R.N., M.S.N.  
 M. Marcia Lynch, R.N., M.S.  
 Susan C. Marchessault, R.N., M.S.  
 Marilyn M. Smith, R.N., M.S., M.B.A.  
 Joyce E. Tingle, R.N., M.S.  
 Nancy Walden, R.N., M.S.  
 Mary Wilcox, R.N., M.S.  
 M. Delaine Williamson, R.D., M.S.

#### Instructors

Sister Marie Bransfield, R.N., M.S.  
 Sally Cloutterbuck, R.N., M.S.  
 Virginia Dooley, R.N., M.S.  
 Mary Ferguson, R.N., M.S.  
 Elaine Hurley, R.N., M.S.  
 Katherine Rubin, R.N., B.S.  
 Patricia Williams, R.N., M.S.  
 Elaine Wilson, R.N., M.S.

#### Assistant Professors

Anne Marie Brogan, R.N., M.S.  
 Elaine L. Capozzoli, R.N., B.S.  
 Nancy M. Carr, R.N., M.S.  
 Barbara E. Carran, R.N., M.S.  
 Lael T. Cutler, R.D., M.P.H.  
 Patricia DeBoom, R.N., M.S.  
 Kathleen Govostes, R.N., M.S.  
 Barbara P. Madden, R.N., M.S.  
 Edna Mayer, R.N., M.S.  
 Geraldine A. Medici, R.N., M.S.N.  
 Maureen Nagelhout, R.N., M.S.  
 Marion O. Newton, R.N., M.S.  
 D. Jeanne Otto, R.N., M.S., M.Ed.  
 Alma Randall, R.N., M.S.  
 Constance A. Willis, R.N., M.S.

### Professional Preparation

#### Aims

First in the nation to operate on the Cooperative Plan, The College of Nursing was established at Northeastern University in 1964. The College offers two distinct educational programs which prepare men and women to practice nursing.

The associate degree program, begun in 1964, is three years in length and leads to the degree of Associate in Science. Its purpose is



to prepare a beginning practitioner to give nursing care in a variety of patient-care settings.

Initiated in 1966, the baccalaureate degree program is five years in length and leads to the degree of Bachelor of Science. The program is designed to prepare beginning practitioners, but it also provides a foundation for career advancement via graduate experience and/or study in such areas as clinical nursing, administration, teaching, and research.

### *Program for LPNs*

There is a special program for a limited number of qualified licensed practical nurses who wish to expand their educational background and become registered nurses. Those who meet the requirements during the first year are granted credit for past experience and education toward the Associate in Science degree.

### *Programs for RNs*

The College of Nursing has instituted a program for registered nurses who wish to complete requirements for the Bachelor of Science Degree in Nursing.

The length of the program depends upon the individual's interest and ability to achieve advanced placement. Applicants whose knowledge of subject areas has been obtained through actual experience, previous educational preparation, or individual study, are encouraged to apply for credit through the advanced placement process. This opportunity is available in most of the nursing and non-nursing courses. Tests prepared by Northeastern University faculty and CLEP (College Level Examination Program) will be utilized.

### *A View of the Nursing Programs*

In common with the other Basic Colleges at Northeastern, the College of Nursing operates on the Cooperative Plan. In addition to college instruction, each student obtains practical experience as a paid employee of one of the cooperative health agencies. The work does not carry academic credit, but it must be satisfactorily completed. During periods of employment, students have the opportunity to increase nursing skills and gain significant experience in nursing settings, as well as earn money to help defray expenses.

The College of Nursing programs offer general education courses concurrently with nursing courses to provide the learning foundation for the practice of nursing. The Nursing major is planned in sequential order and draws on the content from the physical, biological and social sciences, and from the humanities. There is no direct transfer from one program to another.

Freshmen remain on campus for three consecutive quarters of academic study, and students in succeeding years alternate periods of study at Northeastern with periods of work in participating health agencies. Under the guidance of the College of Nursing faculty, clinical experience in the care of patients is introduced in the first year of the associate degree program and in the second year of the baccalaureate degree program. Approximately 20 outstanding hospitals and health-related agencies are utilized to provide facilities for clinical laboratories.



Cooperative work placements are arranged by a nursing coordinator in accordance with agreements made by the University and a number of hospitals in the Greater Boston area and surrounding communities. The hospitals employ students from both programs and provide appropriate sequences of work experience. The cooperative work experience is a requirement for the degree, and students are expected to accept placement at any of the collaborating hospitals. Student preferences as to assignment will be given consideration in conjunction with other factors, but final decisions as to hospital assignment must rest with the nursing coordinator.

## **Graduation Requirements**

### *Degrees*

Either an Associate in Science or Bachelor of Science degree is awarded at the completion of the appropriate program. All candidates must successfully complete all the prescribed courses and periods of cooperative work. One hundred and fifteen quarter hours are required for the Associate in Science degree and 174 for the Bachelor of Science. An overall scholarship average of C in both nursing and general studies is required for graduation.

### **Graduation with Honors**

Candidates for the bachelor's degree who have attained superior grades in their academic work will be graduated with honors. Upon special vote of the faculty, a limited number of this group are graduated with high honors or highest honors. Students must attend the University at least six quarters to become eligible for honors at graduation.

### **Accreditation**

The programs of the College of Nursing are fully accredited by the National League for Nursing and approved by the Board of Registration in Nursing of the Commonwealth of Massachusetts.

### **Licensure**

The programs of the College of Nursing enable graduates to take the professional examinations established by the Board of Registration in Nursing of the Commonwealth of Massachusetts. Graduates take these examinations for licensure as registered nurses when they are first offered after graduation.

### **Special Requirements**

Students in the College of Nursing are required to wear the school uniform in clinical laboratory areas during academic quarters. A modification of the uniform is worn during cooperative work periods.

All students must carry malpractice insurance. Arrangements for this insurance are made by the University.

### **Sample Freshman-Year Program of Studies**

#### **Associate Degree Nursing Program**

*First Quarter*  
Fundamentals of Nursing  
Chemistry  
Human Biology  
English

*Third Quarter*  
Fundamentals of Nursing  
Growth & Development II  
Physiology  
Basic Psychology

*Second Quarter*  
Fundamentals of Nursing  
Growth & Development I  
Anatomy & Physiology  
Microbiology



### Sample Freshman-Year Program of Studies

#### Associate Degree Program for Licensed Practical Nurses

##### First Quarter

Introduction to Technical Nursing  
Chemistry  
Basic Psychology  
Human Biology

##### Second Quarter

Technical Nursing  
Growth & Development I  
Anatomy and Physiology  
Abnormal Psychology  
Microbiology

##### Third Quarter

Nursing Seminar  
Growth & Development II  
Physiology  
English  
Trends in Nursing

### Sample Freshman-Year Program of Studies

#### Baccalaureate Degree Nursing Program

##### First Quarter

Biology  
Western Civilization  
English  
Nursing

##### Second Quarter

General Chemistry  
Biology  
English  
Nursing

##### Third Quarter

General Chemistry  
Anatomy  
Western Civilization  
Nursing

### Associate Degree

#### Basic Course Requirements

##### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Basic Psychology	4	*American Political Process	4
*Chemistry	3	*Microbiology	4
*English	4	*Anatomy and Physiology	4
English	4	*Human Biology	3
**Principles of Sociology	4	*Physiology	4
		Electives	8

##### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Fundamentals of Nursing	18	**Abnormal Psychology	4
*Growth and Development I & II	8	**Maternal-Child Nursing	12
**Medical-Surgical Nursing I	11	Professional Development	1
Medical-Surgical Nursing II	7	Psychiatric Nursing	8

\*These courses are usually taken in the first year.

\*\*These courses are usually taken in the second year.

### Associate Degree for LPN's

#### Basic Course Requirements

##### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Basic Psychology	4	*Principles of Sociology	4
*Chemistry	4	**English	4
*Microbiology	4	**American Political Process	4
*Anatomy and Physiology	4	or	
*Human Biology	3	**U.S. to 1865	4
*Physiology	4	or	
*English	4	**U.S. since 1865	4
		**Electives	8

## II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Introduction to Technical Nursing	5	**Psychiatric Nursing	8
*Technical Nursing	2	**Professional Development	1
*Growth and Development I & II	8		
*Abnormal Psychology	4		
*Nursing Seminar	3		
*Trends in Nursing	1		
**Maternal-Child Nursing and	12		
**Medical-Surgical Nursing II	7		

\*These courses are usually taken in the first year.

\*\*These courses may be taken in the summer of the first year or the second year.

### Baccalaureate Degree Basic Course Requirements

## I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Biology	8	**Fundamentals of Psychology I & II	8
*Western Civilization	8	**Social Anthropology	4
*English	8	Principles of Sociology	4
*General Chemistry	10	Social Psychology	4
*Anatomy	4	Electives (6)	24
**Microbiology	4	(includes 8 Q.H. of humanities)	
**Physiology	8		

## II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Nursing	9	Maternal-Child Nursing	9
**Nursing	10	Psychiatric-Mental Health Nursing	9
Growth & Development I & II in 3rd year	8	Public Health Nursing	9
Pharmacodynamics	3	Contemporary Nursing	9
Nursing	6		
Medical-Surgical Nursing	9		

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.

## College of Pharmacy and Allied Health Professions

Victor D. Warner, Ph.D., *Acting Dean*

### **FACULTY Professors**

Arnold S. Goldstein, Ph.D.  
O. James Inashima, Ph.D.  
John L. Neumeyer, Ph.D.  
Robert Raffauf, Ph.D.  
Pierre F. Smith, Ph.D.  
Elliot Spector, Ph.D.

### **Associate Professors**

Judith T. Barr, M.Ed.  
Roger W. Giese, Ph.D.  
James J. Gozzo, Ph.D.  
Suzanne B. Greenberg, M.S.  
Britta L. Karlsson, M.S.  
Albert H. Taubman, Ph.D.  
Victor D. Warner, Ph.D.

### **Assistant Professors**

Thomas Barnes, M.S.  
Jeffrey B. Blumberg, Ph.D.  
Norman R. Boisse, Ph.D.  
Gerald L. Davis, Ph.D.  
Richard C. Deth, Ph.D.  
Robert N. Hanson, Ph.D.  
Clifford E. Hotte, Ph.D.  
Bynum Jackson, Ph.D.  
Donald S. Kosersky, Ph.D.  
Simon H. Kuttub, Ph.D.  
Nancy Carolyn Love, M.S.  
Patrick F. Plunkett, M.S.  
B. Susan Rogers, M.S.  
Fred N. Schneiweiss, Pharm.D.  
Leon D. Shargel, Ph.D.  
Judith Weilerstein, M.P.H.  
Andrew B. C. Yu, Ph.D.

### **Instructors**

Victoria Gregonis, B.S.  
Mary MacKinnon, M.S.

Glen B. Miller, B.S.  
Joan Tourigny, B.S.

### **Clinical Professor**

John Webb, M.S.

### **Clinical Associate Professors**

Michael A. Davis, Sc.D.  
William A. Gouveia, M.S.  
Alun G. Jones, Ph.D.

### **Clinical Assistant Professors**

Jerome P. Janousek, M.S.  
Joseph M. Sceppa, M.S.  
Richard T. Scheife, Pharm.D.  
George P. Sesin, Pharm.D.

### **Clinical Instructors**

Martin Abramson, M.S.  
Mario Forcione, M.Sc.  
Gloria Gifford, B.S.  
Maryann Greer, B.S.  
Alan P. Kohl, B.S.  
Gail F. Lockberg, B.S.  
Louis Lunetta, M.S.  
Gaetano Paladino, M.S.  
Joseph Reynolds, B.S.  
Anthony Ricciardone, M.S.  
Marcia Stowell, B.S.  
Leon Tenofsky, M.S.  
Bruno Vignoni, B.S.

### **Adjunct Professors**

Bradley Copeland, M.D.  
George Krause, M.S.

### **Lecturers**

Howard Christian, M.D.  
Agnes Kim, M.D.

## **Professional Preparation**

### *Aims*

Northeastern University recognizes the increased demand for well-educated pharmacists and allied health professionals. The College of Pharmacy and Allied Health Professions is pledged to meet this need by combining its unique Cooperative Plan of Education with a highly innovative academic program designed to prepare students to become effective professional practitioners, to enter graduate schools, and to accept employment in the many areas responsible for the delivery of health care.

### *A View of the Five-Year Program*

Fundamental to the College's approach to health care education are:

1. A curriculum of highly relevant and closely integrated courses in the physical, biological, behavioral, and administrative sciences comprising the basis of modern professional practice;
2. A responsiveness to the individual career goals of our students and the capabilities of structuring a course of study that will serve their individual needs;
3. A meaningful involvement in the clinical aspects of patient care via affiliations with teaching hospitals and related institutions;
4. A cooperative internship program under the guidance of qualified professional practitioners—to give students the opportunity to acquire the skills and actual experience integral to the total program;
5. A commitment to the search and advancement of new and progressive concepts, ideas, and philosophies of education and professional practice.

### **Facilities**

The College occupies the Mugar Life Sciences Building on the Main Campus of the University. Completed in 1963, this multimillion-dollar facility offers proximity to all the academic and extracurricular activities of the University.

The building and the recently completed addition, with its spacious and well-equipped laboratories and classrooms for both undergraduate and graduate programs, are designed to anticipate the physical needs of a growing and progressive College. In addition to faculty and administrative offices, departmental libraries, and the graduate schools, there are laboratories for radioisotopes, clinical chemistry, medicinal chemistry, drug analysis, prescription pharmacy, clinical pharmacy, hematology, pharmacology, pharmacognosy, respiratory therapy, medical record science, and clinical microbiology. A pharmaceutical manufacturing plant, animal rooms, and complete audio-visual capabilities for all programs are also featured in this five-story structure. Excellent research facilities are available for upper-class students who participate in original research projects.

### **Transfer with Advanced Standing**

The College of Pharmacy and Allied Health Professions may accept qualified transfer students who have successfully completed one or more years of preprofessional course work in an accredited college or university.

### **Degrees Granted**

- The degrees of Bachelor of Science, Bachelor of Science in Pharmacy, Associate in Science, and Associate in Science in Dental Hygiene are awarded to qualified candidates.

### **Accreditation**

Each of the programs offered by the College is accredited by the appropriate professional group. The College holds membership in both the American Association of Colleges of Pharmacy and the Association of Schools of Allied Health Professions.

**PHARMACY AND  
ALLIED HEALTH PROFESSIONS**  
**Professional Preparation**  
*Aims*



The Pharmacy program is designed to satisfy the increased demand for professionals in the field. The need for well-qualified pharmacists is likely to continue in direct response to increased populations, greater emphasis on health care, and in particular, to the newer and more diversified utilization of those now in practice in this country. The majority are associated with community practice, and approximately one-half of these pharmacists are self-employed. Hospital pharmacy and institutional practice have attracted over 15,000 practitioners and represents the fastest growing area of the profession. The increased use of the pharmacist as a drug consultant to the medical and nursing staffs has broadened the scope of professional opportunity and given practitioners even greater involvement as part of the health team.

Pharmacy also offers careers in research, production, law enforcement, and education; a considerable number of our graduates have entered leading graduate and professional schools. Another significant trend is found in the increasing number of women entering the profession. Approximately one-third of the entering class is now composed of women.

*A View of the Five-Year Major*

The College offers a five-year curriculum which leads to the degree of Bachelor of Science in Pharmacy. The curriculum includes instruction in each of three natural divisions: (1) nonscientific courses in general education (the humanities and social sciences); (2) mathematics and the basic physical and biological sciences; and (3) courses in the areas of professional instruction—medicinal chemistry, pharmacognosy, pharmacology, pharmaceuticals, pharmacy administration, and clinical pharmacy.

The curriculum offers a progressive approach to pharmaceutical education. Emphasis is placed on the biologic and chemical applications of drug therapy, and the College maintains affiliations with several major teaching hospitals in which students undertake a clinical clerkship. Because of an inside range of professional electives and courses offered on an interdisciplinary basis with other basic colleges, the program is sufficiently flexible to give students the opportunity to specialize. Teachers throughout the College use the latest concepts in educational techniques, including extensive application of audio-visual material and directed study opportunities. The academic program is highly coordinated with the cooperative education component to provide meaningful training for a contemporary pharmacist.

In addition, through its Graduate School of Pharmacy and Allied Health Professions, programs leading to the Master of Science and Doctor of Philosophy degrees are offered.

**Graduation Requirements**  
*Degree*

Candidates for the Bachelor of Science in Pharmacy degree must complete all of the prescribed work of the curriculum. Students who undertake the Cooperative Education program must meet the requirements of the Department of Cooperative Education before they become eligible for their degrees.

No student transferring from another college or university is eligible

to receive a degree until at least eight quarters of academic work immediately preceding graduation have been completed at North-eastern. Exceptions to this requirement may be made for students transferring from another college of pharmacy.

### Graduation with Honors

Candidates who have attained superior grades in their academic work will be graduated with honors. Upon special vote of the faculty, a limited number of this group may be graduated with high honors or with highest honors. Students must have been in attendance at the University for at least eight quarters before they become eligible for honors at graduation.

### Accreditation

The program offered by the College of Pharmacy subscribes to the standards established by the American Council on Pharmaceutical Education and the American Association of Colleges of Pharmacy of which it is a member.

### Licensure—Pharmacy

Pharmacists must meet certain requirements to obtain a license from the state in which they wish to practice. These requirements ordinarily include graduating from an accredited college of pharmacy, passing an examination given by a State Board of Pharmacy, and completing an "internship" or apprenticeship.

The internship is a period of supervised practical experience in a preceptor pharmacy. This is generally satisfied during the cooperative work periods commencing at the end of the student's second academic year. During the periods of full-time employment, the salary received enables the student to pay a substantial part of his educational expenses.

### Sample Freshman-Year Program of Studies in Pharmacy

<i>First Quarter</i>	<i>Second Quarter</i>	<i>Third Quarter</i>
Basic Math	Calculus	Biology
General Chemistry	L. A. Elective	English
L. A. Electives	Biology	General Chemistry
	English	Basic Pharmacy

*In addition to the above courses, a student may elect to take Basic ROTC.*

### Basic Course Requirements

#### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Basic Math	4	Anatomy-Physiology	10
*Calculus	4	General Biochemistry	4
*General Chemistry	10	Clinical Biochemistry	4
*English	8	Microbiology	4
*Biology	8	Liberal Arts Electives (9)	36
**Physics	8		
**Organic Chemistry	10		



**II. PROFESSIONAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
*Basic Pharmacy	3	Public Health	3
Pharmacy I & II	8	Professional Practice I	5
Medical Chemistry/ Pharmacology I-IV	20	Jurisprudence	4
Drug Analysis	5	Pharmacy Administration	4
Pharmacy III & IV	8	Professional Practice II & III	8
Pathology	4	Clinical Pharmacy II	7
Toxicology	4	Placement Techniques	1
		Professional Electives (4)	14-20
		General Elective	4
		Introduction to Clinical Pharmacy	3

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.

**DENTAL HYGIENE****Professional Preparation***Aims*

The Forsyth School for Dental Hygienists conducts a program of dental hygiene education and general education in cooperation with Northeastern University. Students in this two-year program attend classes both at the Forsyth Dental Center and Northeastern. The dental hygienist is licensed to render direct preventive services to the patient under the direction of a dentist. Services include administering dental prophylactic treatment, preparing dental radiographs, and teaching prescribed methods of maintaining dental health.

*A View of the Program*

The first year includes courses in anatomy, chemistry, microbiology, nutrition, restorative dentistry, radiology, periodontology, dental hygiene and clinical dental hygiene instruction. In the second year students take general education courses such as English, sociology, and psychology and professional courses in pathology, periodontology, public health, pharmacology, dental materials, and functional dental anatomy and continue to receive clinical dental hygiene instruction.

*Degrees*

Students completing the program will receive the Certificate in Dental Hygiene from Forsyth and the Associate in Science Degree in Dental Hygiene from Northeastern University. Graduates are required to take the state board examinations in the state in which they intend to practice.

**Accreditation**

This program is accredited by the Commission on Dental Education of the American Dental Association.

**Other Information**

Students are admitted directly to the Forsyth School for Dental Hygienists and should contact the school for catalogs and applications by writing to 140 The Fenway, Boston, Massachusetts 02115.

## Sample Freshman-Year Program of Studies in Dental Hygiene

*First Quarter*  
Functional Human Anatomy  
Chemistry  
Dental Anatomy  
Radiology  
Dental Hygiene  
Clinical Dental Hygiene

*Third Quarter*  
Microbiology  
Head and Neck Anatomy  
Restorative Dentistry  
Periodontology  
Applied Nutrition  
Clinical Dental Hygiene

*Second Quarter*  
Functional Human Anatomy  
Chemistry  
Nutrition  
Histology  
Dental Hygiene  
Clinical Dental Hygiene

### Basic Course Requirements

#### I. GENERAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
**English Composition and English Literature	8	**Foundations of Psychology I	4
*Chemistry	6	**Sociology	4
*Microbiology	4	*Functional Human Anatomy	10

#### II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Dental Anatomy	3	**Pathology	3
*Radiology	2	***Periodontology	4
***Dental Hygiene	8	**Public Health	4
***Clinical Dental Hygiene	21	**Functional Dental Anatomy	2
*Nutrition	4	**Pharmacology	2
*Histology	2	*Head and Neck Anatomy	2
*Restorative Dentistry	2	**Dental Materials	2

*\*These courses are usually taken in the first year.*

*\*\*These courses are usually taken in the second year.*

*\*\*\*These courses are taken in both the first and second years.*



**MEDICAL LABORATORY  
SCIENCE  
MEDICAL TECHNOLOGY  
Professional Preparation**

*Aims*

Medical technology involves the application of principles of natural, physical, and biological sciences to the performance of laboratory determinations used in the diagnosis and treatment of disease and the maintenance of health. The demand for properly educated and certified medical technologists is increasing as a result of greater emphasis on quantity and quality of health care delivery. With a strong background in hematology, immunohematology, clinical chemistry, and clinical microbiology, a graduate may find a position not only in a hospital laboratory but also in research, industrial, and governmental institutions.

Opportunities are available for graduate study as well as advanced positions in laboratory administration and education.

*A View of the Five-Year Major*

Students enter the College as Health Professions majors in the Medical Laboratory Science program. The College offers a five-year, modified-cooperative course of study which culminates in the degree of Bachelor of Science. Upon completion of the professional segment, the student is eligible to write a national certification examination in medical technology. During the junior and senior years, qualified students are assigned to one of the hospital components of the medical technology program. To qualify for entrance into the hospital component of the program, a student must have an acceptable point average and have completed all University course requirements, including those in biology, chemistry, and mathematics which are required for certification. The professional courses in hematology, pathogenic microbiology, serology, mycology, parasitology, chemistry, instrumentation, and blood banking are given in both the University and the hospital components of the program.

Students will register at the University for 12 quarters including two interim sessions of five days each. This 12-quarter curriculum will include the entire academic program plus all clinical and professional requirements. During the five-year program, cooperative work periods will be regularly assigned.

*Degree*

The degree granted will be the Bachelor of Science. This degree represents not only the formal completion of the subjects in the selected course of study, but also indicates competence in the medical laboratory sciences.

**Accreditation**

Applications for the integrated university-hospitals medical technology program have been submitted to the National Accrediting Agency for Clinical Laboratory Sciences and the Council on Medical Education of the American Medical Association.

**Other Information**

The academic component of the medical technology program is primarily at the University. The clinical component or "internship" is at the New England Deaconess, New England Baptist, Emerson, and Peter Bent Brigham Hospitals.

**Option**

Certain students enrolled in the baccalaureate degree program may elect to write the certificate examination for technician or for cytotechnologist at the associate degree level. Having completed the first two years of the academic curriculum and the basic professional courses, these students may take the appropriate practicum leading to eligibility to write the certification examination for medical laboratory technician or for cytotechnologist and may earn the associate degree at the University.

**Sample Freshman-Year Program in Medical Laboratory Science***First Quarter*

Math or Calculus  
General Chemistry  
General Biology  
English Composition

*Second Quarter*

Math or Calculus  
General Chemistry  
Animal Biology  
Modern Language I or Elective  
Orientation to Medical Laboratory Science

*Third Quarter*

Elective  
English Literature  
Mod. Lang. II or Elect.  
Basics of Medical Laboratory Science  
Dynamics of Health Care

**Basic Course Requirements****I. GENERAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
*English and English Literature	8	Genetics and Developmental Biology	4
*Biology—General and Animal	8	Physics	10
*Math or Calculus	8	Microbiology	4
*General Chemistry	10	Int. Mod. Language and/or other Humanities	12
**Organic Chemistry	10	Social Sciences	12
**Analytical Chemistry	4	General Electives	12
**Physiology	8	Biology Elective	4
Cell Biology	4		

**II. PROFESSIONAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
*Dynamics of Health Care	2	Clinical Chemistry	5
*Orientation to Medical Laboratory Science	1	Clinical Microbiology	5
*Basic Medical Laboratory Science	3	Applied Study (at hospital)	15
Basic M.L.S. Hematology I	3	Communications in the Health Sciences	4
**Basic M.L.S. Hematology II	3	Laboratory Management	2
**Basic M.L.S. Immunohematology	3	Health Science Education	2
**Basic M.L.S. Chemistry and Instrumentation	5	Undergraduate Research	2
**Basic M.L.S. Clinical Microbiology	6	Instrumentation I	2
Hematology	3	Instrumentation II	2
Immunohematology	2		

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.

**MEDICAL RECORD  
ADMINISTRATION**  
**Professional Preparation**

*Aims*

A medical record administrator is prepared to organize, operate, and manage a Medical Records Department. The program will enable the student to be responsible for designing health information and retrieval systems; for planning, organizing, and directing medical record services; for developing, analyzing, and evaluating medical records and indexes; for working with the medical and administrative staffs in developing methods for evaluation of patient care, and in research projects utilizing health care information.

*A View of the Five-Year Major*

In the first two years, the student will concentrate on liberal arts and sciences, including the required human anatomy and physiology courses with an overview of microbiology and pharmacology. Introductory courses in health care science will prepare the student for his role in health administration and health care delivery.

The program includes preparation in administration, departmental and hospital management and organization, and in electronic data processing. The professional courses in medical record science, medical terminology, and hospital law are complemented by directed applied study in medical record science at an affiliated health facility.

*Degree*

The Medical Record Administration program is offered on the Cooperative Plan. Successful completion of the prescribed curriculum, including the directed study at the affiliated hospital, will permit the award of a Bachelor of Science degree. This degree represents not only the formal completion of the subjects in the selected course of study but competence in the field of specialization. Graduates are eligible to write the registration examination given by the American Medical Record Association.

**Accreditation**

This program is approved by the Council on Medical Education of the American Medical Association in cooperation with the American Medical Record Association.

**Special Information**

Students interested in this profession should arrange for an interview with the program director.

**Sample Freshman-Year Program  
of Studies in Medical Record  
Administration**

*First Quarter*  
English Composition  
Biology  
Math  
Psychology  
Orientation to Medical Records

*Second Quarter*  
Biology  
Math  
Modern Language or Pol. Sci.  
Orientation to Medical Records

*Third Quarter*  
English Literature  
Math  
Dynamics of Health Care  
Modern Language and Psychology  
or  
Modern Language and Chemistry  
or  
Psychology & Pol. Sci.  
Drug Uses and Actions

*In addition to the above courses, a student may elect to take ROTC.*

**Basic Course Requirements****I. GENERAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
*English Comp. and English Literature	8	Drugs, Use and Action	4
*Mathematics	9	Organizational Behavior	8
Public Speaking	3	Introduction to Computer Science	4
*Biology (General and Animal)	8	*Psychology	4
**Anatomy and Physiology	10	**Sociology	4
**Microbiology	3	*Modern Language or other Humanity	16
Statistics	4	Other Social Science	8
Economics or Western Civilization	8	General Electives	12

**II. PROFESSIONAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
Orientation to Medical Records	2	Seminar in Medical Records	2
Medical Records Science I-IV	16	Health Science Education	2
Medical Terminology	4	Applied Study	8
Foundations of Medical Science	6	Hospital Organization and Management	3
Hospital Law	2	Application of Med. Comp. Systems	4
Organization and Management Medical Record Dept.	6	*Dynamics of Health Care Systems	2
Applied Health Statistics	4	Quality Assurance	4
		Independent Study	4
		Special Topics	4

\*These courses are usually taken in the Freshman year.

\*\*These courses are usually taken in the Sophomore year.



## **PHYSICIAN ASSISTANT**

### **Professional Preparation**

#### *Aims*

Lecturers for this program include faculty from the medical schools in the Boston area.

This is a program for the education of the Primary Care Physician Assistant who is a skilled person qualified by academic and clinical training to provide patient services under the supervision and responsibility of a doctor of medicine. The Physician Assistant may work in a variety of settings, such as a physician's office, clinic, hospital, or nursing home. It is expected that the Physician Assistant will be able to do at least the following: elicit a detailed and accurate history, perform a physical examination, perform routine procedures such as the drawing of blood samples, injections, suturing and caring for wounds, counsel the patient on matters relating to health, and provide evaluation and treatment in life-threatening emergencies.

#### *A View of the Major*

This 18-month program, which begins in September, includes didactic work at Northeastern University and clinical rotations in medicine, surgery, pediatrics, emergency medicine, psychiatry, and obstetrics at teaching hospitals in the Boston area. Upon satisfactory completion of the program, students will be awarded a certificate by the University.

#### *Special Requirements*

The program was originally open only to medical corpsmen in the armed forces, but is now open to other candidates. However, it is not designed for the high school senior entering an institution of higher learning for the first time. Applicants must have successfully completed a minimum of two years of college, including courses in chemistry and biology on the college level. (Since the educational attainment of a majority of applicants exceeds the minimum requirements, those accepted often hold baccalaureate degrees.) In addition, successful applicants must have had at least one year of direct patient care experience.

Scholastic Aptitude Test scores are required for applicants without a degree. Application materials may be obtained by contacting the Physician Assistant Program Office at 202 Robinson Hall or by telephoning (617) 437-3195.

**Accreditation**

The Physician Assistant program meets the requirements laid down by the Council on Medical Education of the American Medical Association as essentials for an approved educational program to train primary care physician assistants. Membership in the Association of Physician Assistant Programs is maintained. The program is also approved by the Massachusetts Board of Approval and Certification of Physician Assistant Programs.

**Other Information**

This program is offered by Northeastern University in cooperation with the Massachusetts Medical Society and the Office of Special Programs in the Department of Health, Education and Welfare.

**Sample First-Year Program of Studies in the Physician Assistant Program***First Quarter*

Anatomy & Physiology I  
Physical Diagnosis  
Principles of Interviewing  
Principles of Pediatrics  
Patho-Physiology and Medicine I  
Roles, Rules, Ethics, and Resources  
for Physician Assistants

*Third Quarter*

Patho-Physiology and  
Medicine III  
Basic Pharmacology  
Applied Study

*Second Quarter*

Anatomy and Physiology II  
Basic Medical Laboratory Science  
Patho-Physiology and Medicine II  
Physiologic Basis of Disease  
Principles of Obstetrics and  
Gynecology  
Principles of Psychiatry

**Basic Course Requirements****II. PROFESSIONAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
Anatomy & Physiology	8	Basic Medical	
Medical Care and Current		Laboratory Science	4
Social Problems	2	Basic Pharmacology	3
Essentials of Physical		Medical Therapeutics	3
Examination	5	Survey of Rehabilitation Medicine	2
Principles of Interviewing	2	Basic Diagnostic	
Principles of		Radiology	2
Psychiatry	3	Principles of	
Physiologic Basis of		Obstetrics and	
Disease-Neurophysiology	2	Gynecology	3
Patho-Physiology and		Fundamentals of	
Medicine I, II & III	6	Electrocardiography	2
Principles of Pediatrics	3	Roles, Rules, Ethics, and	
Principles and Concepts		Resources for Physician	
of Surgical Intervention		Assistants	2
in Disease Process	3	Patient Education and	
		Counseling	2
		Applied Study I-IV	20

**RESPIRATORY THERAPY****Professional Preparation***Aims*

The respiratory therapist is concerned with the diagnosis and treatment of acute and chronic lung disease occurring in patients of all ages—from newborn babies to senior citizens. Practitioners must be able to apply knowledge of basic sciences to use ventilators, oxygen equipment, humidifying devices, and pertinent diagnostic tools. Res-



piratory therapists provide direct minute-to-minute care to patients requiring continuous ventilatory support. Additional therapies include administration of medical gases, aerosol and humidity treatments, intermittent positive pressure breathing, and chest physiotherapy. Other responsibilities include teaching home care techniques to the patient with chronic disease, using and maintaining respiratory function equipment and other electronic and mechanical devices.

### *A View of the Major*

Students enter the College as majors in the Respiratory Therapy program. Mathematics, chemistry, and the physical, biological, medical, and health sciences provide the basis for the professional instruction in Respiratory Therapy. English, psychology, and elective courses in the humanities and social sciences provide the general educational background. Clinical study at the affiliated hospitals provides the opportunity for direct patient care and the immediate application of highly specialized techniques.

### *Degree*

The curriculum leads to the Associate in Science degree and includes all academic quarters at the University, a structured clinical program, and assigned co-op quarters. Successful completion of the program prepares candidates to take the examination of the National Board for Respiratory Therapy and also provides a basis for continuation of study leading to a baccalaureate degree.

### **Accreditation**

This program is approved by the Council on Medical Education of the American Medical Association.

### **Sample Freshman-Year Program of Studies in Respiratory Therapy**

#### *First Quarter*

English Composition  
General Chemistry  
Basic Animal Biology  
Introduction to  
Respiratory Therapy I  
Mathematics

#### *Third Quarter*

Microbiology  
General Chemistry  
Introduction to  
Respiratory Therapy III  
Dynamics of Health Care  
Liberal Arts Elective

#### *Second Quarter*

English Literature  
Calculus  
Introduction to  
Respiratory Therapy II  
Basic Animal Biology  
Medical Terminology  
Physics of Fluids

### **Basic Course Requirements**

#### **I. GENERAL REQUIREMENTS**

Course	Q.H.	Course	Q.H.
English Composition and		*Basic Psychology	4
English Literature	8	**General Chemistry	10
Math	8	Pharmacology	4
Anatomy & Physiology	10	**Speech or Communica-	
Physics	3	tions Elective	4
Basic Microbiology	4	Social Science Elective	4
		Liberal Arts Electives	12

## II. PROFESSIONAL REQUIREMENTS

Course	Q.H.	Course	Q.H.
*Dynamics of Health Care	2	Clinical Seminar	2
*Respiratory Seminars	3	Resp Care for Critical Patients	3
Cardio-Pulmonary Physiology	4	Found of Med Science	3
Intro to Patient Care	3	Cardio-Pulmonary Lab Technology	3
Prof. Practice Labs I, II, III, IV	4	Cardio-Pulmonary Lab Practice	1
Cardio-Pul Disease	4	Foundations of Clin Lab	4
Intro to Respiratory Care	3	Health, Disease, and Disability	4
Clinical Practice I and II	8	Hospital Law	2
Resp Care for Med, Surg Patients	3		

\*These courses are usually taken in the Freshman Year.

\*\*These courses are usually taken in the Second Year.

## Human Services

An interdisciplinary major involving the

College of Criminal Justice

College of Education

College of Liberal Arts

### ADVISERS Criminal Justice

Robert D. Croatti, M.Ed., *Assistant Dean*

### Education

Professor Susan E. Massenzio, Ph.D.

Professor Barbara Schram, Ed.D.

Allison S. Young, *Administrative Assistant, Office of the Dean*

### Liberal Arts

Ruth H. Karp, M.A., *Associate Dean*

Professor Wilfred Holton, Ph.D.

Professor Edward M. Humberger, Ph.D.

Professor Harold Zamansky, Ph.D.

Jane P. Graham, M.Ed., *Assistant to the Dean*

John C. McCarthy, M.Ed., *Assistant to the Dean*

### COORDINATORS Professor Barbara Schram, Ed.D., *Coordinator*

Professor Wilfred Houlton, Ph.D., *Associate Coordinator*

Professor Susan E. Massenzio, Ph.D., *Associate Coordinator*

## Professional Preparation

### Aims

The program in Human Services is designed to enable students with a bachelor's degree to enter a career in one of the areas broadly de-

financed as "Human Services." The program is interdisciplinary and was planned by three of the Basic Colleges at Northeastern to provide fundamental knowledge and skills which will enable a graduate to enter a meaningful career, as well as graduate education.

Students in the Colleges of Criminal Justice, Education and Liberal Arts who major in Human Services may be prepared to perform a variety of functions in public and private agencies, including the following: placement and career counseling; case work services in social service and welfare agencies; participation in therapeutic treatment programs in general and/or mental hospitals; supportive counseling in community health centers; rehabilitation counseling services; work evaluation in sheltered workshops; parole counseling; court liaison in programs for delinquent youth; staff work in half-way houses, penal institutions, drug treatment centers; and supportive counseling for the mentally retarded.

Since the number and type of agencies delivering Human Services have expanded and continue to expand, the above list only begins to suggest the career possibilities for the Human Services major.

### *Description of Major*

An integral part of the Human Services program is a continuing formal advisory system to help students make the best use of their early course selections and to guide them to appropriate upper-level courses.

There are five basic aspects to the program as follows:

1. *College Requirements.* Degree requirements vary for each participating college. Refer to pages 66-68 for requirements in the College of Criminal Justice; to pages 69-74 for requirements in the College of Education; and to pages 106-111 for the College of Liberal Arts.
2. *Prerequisite Courses.* Eight courses in the areas of Economics, Human Services, Political Science, Psychology, and Social Science are required.
3. *Core Courses.* These consist of 11 courses in the areas of Community Planning, Counseling and Casework, Group Process, Organizational Behavior, Rehabilitation, and Social Welfare.
4. *Concentrations.* A group of four courses focused on a student's area of interest is selected in close cooperation with an adviser.
5. *Supervised Field Experience.* During the last two years, the Human Services major is required to work under supervision in such settings as community centers, nursing homes, and mental health, correctional or recreational facilities, depending upon his concentration. The experience is closely supervised to maximize the integration of on-the-job learning with University course work.

### *A view of the Major*

As noted above, in addition to providing a firm grounding in areas of basic knowledge, students will build on this foundation with skill courses to help prepare them to understand and work with a variety of helping services.

For specific details on degree requirements, a student should consult his Human Services adviser, a counselor in the Office of the Dean of his college, or a member of the Advisory Committee of his college.

## Other Schools and Colleges of the University

### LINCOLN COLLEGE

In addition to full-time curricula described earlier in this bulletin, Lincoln College offers interdisciplinary and certificate programs providing technological and professional development opportunities to meet special needs of the part-time student. These programs are designed to provide trained people for ready assimilation into industry and to prepare students for the challenge of interfacing technology and society.

The part-time evening program includes pretechnology preparatory courses and degree programs leading to the Associate in Engineering (A.E.), and the Bachelor of Engineering Technology (B.E.T.) in Civil, Mechanical, and Electrical Engineering Technology. The Associate in Science degree may be earned in the Mathematical, Physical, and Chemical sciences.

In recognition of the need for greater technical efficiency in fighting fires—better fire investigators, fire prevention, and fire protection—Lincoln College, in collaboration with local agencies, has designed a part-time evening program leading to an Associate in Science degree in Fire Technology. The curriculum includes a broad spectrum of those science technologies which are basic in coping with today's complex fire-fighting problems.

### UNIVERSITY COLLEGE

University College is committed to the education of mature, adult students who wish to live effectively in today's complex society. Programs are specifically designed to satisfy their changing professional, cultural, and social needs and interests.

Degree programs have been developed in 39 major fields of study in the areas of business administration, education, liberal arts, law enforcement, therapeutic recreation, and health-related programs. Flexible curricula are offered on a part-time basis Monday through Saturday during day and evening hours convenient to adult students. Students may elect single courses or may enroll in full degree programs leading to the Associate in Science or the Bachelor's degree. Short-term seminars are also offered for credit. Classes are scheduled in locations which are accessible to the urban and the suburban community. Students may attend classes at the Huntington Avenue Campus, Boston, or the Suburban Campus, Burlington, Massachusetts, as well as other off-campus locations north, south, and west of Boston.

University College programs are constantly evaluated and redesigned when necessary to keep pace with the changing needs and interests of its students and the community.

Program advisers are available by appointment day and evening in the University College Office. They can assist the student in planning a program suitable to his general educational and career objectives and can also answer questions relating to degree requirements, course sequence, and proper scheduling of courses. Appointments may be arranged by calling the University College Office (437-2400) or by coming in person to 102 Churchill Hall. There is no charge for this service.

Program advisers are also available during registration at all registration sites. No appointment is necessary.

## **GRADUATE AND PROFESSIONAL SCHOOLS**

The 10 graduate and professional schools of the University offer day and evening programs leading to degrees as follows:

### **Actuarial Science**

Master of Science in Actuarial Science.

### **Arts and Sciences**

The Master of Arts degree may be earned in Economics, English, History, Political Science, Psychology, Sociology, and Social Anthropology. The Master of Science degree is available in Biology, Chemistry, Clinical Chemistry, Forensic Chemistry, Mathematics, and Physics. The Master of Science in Health Science and the Master of Public Administration degrees are also offered. In addition, there are programs leading to the Doctor of Philosophy degree in Biology, Chemistry, Economics, Mathematics, Physics, Psychology, and Sociology.

### **Boston-Bouvé**

Master of Science with specializations in Physical Education and Recreation Education. Graduate courses in Health Education are available as electives within the College and for special students.

### **Business Administration**

Master of Business Administration. There are three methods of securing an M.B.A. degree: full-time, internship, and part-time study. The full-time student may complete the program in one to two years of academic study. The internship blends fifteen months of academic study with six months of coordinated work as an intern in a business or nonprofit organization for a total program time of 21 months. Part-time students have the advantage of attending classes in the late afternoon and evening to learn the theory behind the practical application of their employment. Full-time students may also apply for an assistantship which combines their studies with academic experience in the College of Business Administration.

### **Criminal Justice**

Both full- and part-time programs are offered leading to a Master of Science degree in Criminal Justice and a Master of Science degree in Forensic Chemistry. Students enrolled in the Master of Science program in Criminal Justice choose among two major concentrations of study—administration, policy development, and planning or behavioral science theory and research. The Master of Science program in

Forensic Chemistry provides an integrated survey of forensic science as utilized in criminalistics, toxicology, and related professional fields. An interdisciplinary Ph.D. program in Forensic Chemistry is also offered with specialization in either (a) Forensic Toxicology (b) Forensic Materials Science or (c) Forensic Analytical Chemistry. A distinctive feature of the programs is that students have the advantage of attending classes in the late afternoons and evenings.

### **Education**

The Master of Education degree may be earned with specialization in Counselor Education (elementary, secondary schools, community mental health, higher education, cooperative education, rehabilitation), Curriculum and Instruction, Early Childhood Education, Educational Administration, Educational Research, Human Development, Rehabilitation Administration, Special Education, and Speech Pathology and Audiology. The Certificate of Advanced Graduate Study is offered in Counselor Education, Educational Administration, Rehabilitation Administration, and Special Education Administration. The Doctor of Education degree may be earned in Leadership with specializations in Counselor Education, as well as school, rehabilitation, and special education administration.

### **Engineering**

The Master of Science degree may be earned with specification in the fields of Chemical, Civil, Electrical, Industrial, Mechanical Engineering, and Engineering Management, including a six-year program in Power Systems Engineering leading to both bachelor's and master's degrees in Electrical Engineering; a special five-year honors program in Mechanical and Electrical Engineering leading to both bachelor's and master's degrees; the Professional Engineer degree in Mechanical, Industrial, and Electrical Engineering; the Doctor of Engineering degree in Chemical Engineering; and Ph.D. degree in the fields of Electrical, Chemical, Civil and Mechanical Engineering. A special interdisciplinary program leading to the Master of Science in Transportation is also offered.

### **Law**

The School of Law offers a full-time program of professional instruction, leading to the degree of Juris Doctor (J.D.). There are no courses for part-time or evening students.

The School of Law is the only law school in the U.S. based on the co-operative plan. It is a full-time, three year, day program and is accredited by the American Bar Association and the American Association of Law Schools.

After completing the first year curriculum, each student must take on full-time professional jobs with a private firm, a government agency, a legal service organization or a corporate law department. Students alternate work experience and academic quarters and complete their legal educations in the normal three year law school time. Because the law school operates twelve months a year, each student graduates with the accepted academic requirements (7 quarters) together with a full year (4 quarters) work experience.

### **Pharmacy and Allied Health Professions**

The Master of Science degree is offered in Hospital Pharmacy, Medical Laboratory Science, Clinical Chemistry, Medicinal Chemistry, Pharmacology, and Radiopharmaceutical Science. The Ph.D. degree

is offered in Medicinal Chemistry with an interdisciplinary Ph.D. degree available in Clinical Chemistry, Forensic Chemistry, Pharmacology, and Radiopharmaceutical Science.

### **Professional Accounting**

Master of Science in Professional Accounting. The concentrated 15-month program is designed to prepare liberal arts and other non-accounting majors for a career in professional accounting and for the CPA examination. The five-quarter course includes a three-month internship with a leading CPA firm in the middle or winter quarter which provides both practical experience and significant financial support.

New classes start in mid-June of every year.

*Some of these programs are offered on the Cooperative Plan; others provide teaching and research fellowships for able candidates.*

## **THE BUREAU OF BUSINESS RESEARCH**

The Bureau of Business Research gives administrative assistance to research projects carried out under faculty leadership and supervision and is an integral part of the College of Business Administration.

## **THE CENTER FOR MANAGEMENT DEVELOPMENT**

The Center, which is sponsored by the College of Business Administration, offers programs designed to provide professional growth for middle and senior managers. Two programs are scheduled three times per year, the Management Development Program (MDP) and the Management Workshop. In both, participants are sponsored by their employers. The Center also designs and conducts special programs for a wide range of business organizations.

The MDP is a graduate-level course in business for managers who have already had responsibility for a major risk, function, department, division, or independent enterprise. Six weeks of in-residence instruction are spaced over a five-month period, October to February or January to May.

The Management Workshop provides a comprehensive outline of the major areas of business through graduate-level courses in organizational behavior, financial analysis and control, operations management, marketing, and economic forecasting. It meets for 12 consecutive Fridays, beginning either in September, January, or March.

## **CENTER FOR CONTINUING EDUCATION**

The Center for Continuing Education offers a results-oriented educational experience. Its goal is to help students toward more effective performance in their present work and to build on their potential for future responsibilities in a fast-changing world. Coursework is shaped by the principles of adult learning, enhancing awareness and perception, improving personal relationships, and assisting in career growth and personal development. (437-2600.)

## **INSURANCE INSTITUTE**

The Insurance Institute, sponsored by local insurance organizations and companies, is part of University College. It offers a number of noncredit courses in preparation for the Chartered Life Underwriter and Chartered Property-Casualty Underwriter designations, as well as for the General Insurance, Insurance Adjuster, and Risk Management Certificates. (437-2506).



# PART III



# PARTICULARS OF EDUCATION

## PARTICULARS OF EDUCATION

### About Admissions

To find a college or university which will suit one's needs and interests—a place where one can learn to feel at home and make sound preparation for a future career—is a goal of every student who plans to continue his education beyond secondary school. This can be achieved in a number of ways, such as talking with enrolled students, faculty and alumni, and by reading catalogues. A visit to the college campus should be high on one's list of priorities. The Committee on Admissions extends a cordial welcome to all prospective students and has planned a series of on-campus experiences to make a visit as worthwhile as possible.

#### The Admissions Conference

It is only natural that students should have many questions about Northeastern—its programs of study, its services to students, and the Cooperative Plan of Education. For this reason, the Committee on Admissions sponsors a series of Orientation Conferences for students. Offered at 10:00 a.m. and 2:00 p.m. on Mondays and Fridays from October 1 through May 1 (except for legal holidays), these conferences have been most successful in helping students become better acquainted with the University. They include a film and appropriate comments by an admissions counselor. This is followed by an informal question-and-answer period.

Special group sessions are also held in the summer between July 1 and September 1. Further information about these summer conferences may be obtained from the Admissions Department.

#### Guided Tours

Guided tours of the campus are held daily, Monday through Friday, at 11:00 a.m. and 3:00 p.m. Both the admissions conference and the tour should be scheduled in advance by writing or calling the undergraduate Admissions Office (617-437-2211). The opportunity to visit the University's facilities and to observe student life on campus is one important way to learn about Northeastern. Commuting students who wish to visit the University's Suburban Campus in Burlington are encouraged to do so. This will appeal especially to those whose home communities are on the North Shore of Boston.

#### The Interview

Although it is not required, the personal interview is generally regarded as an appropriate time for students with special questions to meet with an admissions counselor. In studying the secondary school record, the counselor may discover some factor which merits further explanation. In this event, the applicant may be asked to arrange a visit to the Admissions Office. The interview, therefore, may be held at the request of the student or the counselor. In most cases, contacts with admissions personnel will be more beneficial if the *University Bulletin* has been carefully studied before the personal interview.

### Special Note

Northeastern does not hold classes for students in the Basic Colleges on Saturdays; hence, guided tours cannot be provided at that time. A weekday visit to the University is recommended. Special Saturday appointments are arranged on a limited basis, however.

## GENERAL REQUIREMENTS FOR ENTRANCE

An applicant for admission to Northeastern University has, ideally, completed a secondary school program that challenged his ability—a program that includes courses in English, foreign language, mathematics, laboratory science, and history. Proficiency in a foreign language is especially important for students entering the College of Liberal Arts. But the overall school record has importance in itself both as an indication of achievement in subjects critical to university study and as a reflection of a wise choice of electives. Candidates are encouraged to broaden their reading outside of class. The student who can communicate ideas, understand the meaning of words, and write effectively is at a distinct advantage. Most importantly, the high school transcript should provide clear evidence of sound study habits so vital to success in higher education.

Today's high school students have had the advantage of many innovations that have greatly enriched their experience—independent study, small group seminars, research projects, and off-campus experiences related to community service or future vocations. Northeastern is understandably interested in the growth of the work/study concept in many secondary schools, and the Committee on Admissions looks with favor upon the variety of these worthwhile experiences.

The University has also introduced flexibility into its programs so that students may explore alternate fields or tailor their programs to personal goals. Although they may be asked to indicate a major for the purpose of having faculty or co-op advisers assigned to assist them, candidates for admission to the Colleges of Business Administration, Engineering, Liberal Arts, or Education do not have to make a definite choice of major until the end of the sophomore year. Many elective courses are now available to freshmen.

Obviously, attendance at a University means the opportunity to change a program of study, in many cases without loss of credit, as new interests develop. The possibilities can be discussed with a counselor in the Office of the Dean of Students at any time during the freshman year.

### **Preparation for Study in Engineering, Science and Mathematics and Allied Health Professions**

It is only natural that evidence of special aptitude and the highest possible level of preparation in the sciences and mathematics should be required for entrance to certain programs of study offered by the University. Such programs include:

#### *Boston-Bouvé College*

Health Education  
Physical Education  
Physical Therapy

#### *College of Education*

The teaching of Science/  
Mathematics, Speech  
and Audiology

#### *College of Engineering*

All programs

#### *College of Liberal Arts*

Biology, Chemistry, Geology,  
Mathematics, Physics

#### *College of Nursing*

A.S. Degree program  
B.S. Degree program

#### *College of Pharmacy and Allied Health Professions*

All programs

#### *Lincoln College*

B.E.T. Degree program

Courses in science and mathematics vary greatly in terminology, teaching methods, and content. Applicants are encouraged, however, to complete the full sequence of such courses if possible. Experience has shown that students in programs emphasizing mathematics and science need courses in the social sciences and humanities to be fully prepared for professional courses.

### **Preparation for Study in Business Administration**

Candidates for admission must have successfully completed a strong preparatory program in high school. Pragmatically, the College aims to give men and women the opportunity to become educated to a level of competence in their respective fields, thus enabling them to choose between an immediate professional career or graduate school. While mathematics plays an important role in the total program, strong emphasis is also placed on liberal studies to effect an intellectual balance with liberal and appreciative courses.

### **Preparation for Study in the Social Sciences, Teaching, and Criminal Justice**

Many candidates for admission have enjoyed their greatest success in areas other than mathematics-science. Their interests lie quite naturally in the study of the humanities and social sciences. Thus such a student may choose to apply for admission to one of the following programs:

#### *Boston-Bouvé College—(Recreation Education)*

The major in Recreation Education is developed from a broad liberal arts foundation. Students may select an emphasis in Community Recreation, Outdoor Education and Conservation, or Therapeutic Recreation for work with the retarded, the handicapped, or the aging.

#### *College of Criminal Justice*

By its very nature, the program in Criminal Justice requires a strong base of liberal arts study before professional courses are introduced. Applicants for admission should therefore demonstrate an ability to succeed in their study of the behavioral, social, and human services.

*College of Education*

Professional courses are based upon a strong foundation of liberal arts study in the humanities and social sciences. Elementary Education majors may focus on any one of six areas, including preprofessional Special Education and Early Childhood Education. Secondary Education majors typically choose among English, Modern Languages, Social Studies, Human Services, and Music Education. (An audition is part of the admissions procedure for Music Education candidates.)

*College of Liberal Arts*

Broad and flexible programs are offered to meet a variety of student interests in African-American Studies, Anthropology, Art History, Drama, Economics, English, History, Human Services, Journalism, Modern Languages, Music, Philosophy, Political Science, Public Administration, Psychology, Sociology-Anthropology and Speech Communication. A wide selection of electives enables students to broaden horizons while developing depth in the field of their major.

### **Entrance Examinations (Freshmen)**

Research clearly indicates that the best single predictor of academic success is achievement in secondary school. Thus, this factor, together with the recommendations of the school counselor, weigh most heavily in the evaluation process. Although the Scholastic Aptitude Test and three Achievement Tests of the College Entrance Examination Board are required, the Committee on Admissions does recognize that these test results do not measure such qualities as determination, imagination, and leadership.

In 1977, the College Entrance Examination Board will introduce a twenty-minute writing sample as part of the English Composition Test. Applicants are encouraged to complete the sample since it will be used to assign students to appropriate freshman English sections. Students whose native tongue is not English may substitute the test of English as a Foreign Language (TOEFL) for the English Composition Test. Two other achievement tests are required in subjects in which the student feels most confident. No single schedule of testing is recommended, but applicants are advised not to take subject matter tests unless they are currently studying such subjects.

*For full information about College Board Examinations, consult a school guidance counselor or write directly to:*

*The College Entrance Examination Board  
Post Office Box 592  
Princeton, New Jersey 08540  
or  
Post Office Box 1025  
Berkeley, California 94701*

*The American College Testing Program may be substituted for the College Board Testing Program.*

*For full information, write to:*

*American College Testing Program  
P.O. Box 168  
Iowa City, Iowa 52240*

Admissions counselors will also be glad to answer questions about these testing programs.

### **Advanced Placement**

The University grants advanced placement credit to those students with a score of three or better in their Advanced Placement Examinations. Such students are excused from the basic courses in Art History, Classics, Modern Languages, English, History, Chemistry, Mathematics, Music, Biology, and Physics and in the advanced courses in languages to which the Examinations apply. They receive full credit for those courses from which they are excused.

Applicants are required to write the Advanced Placement Tests of the College Board in May.

### **College Level Examination Program**

The University cooperates with the College Entrance Examination Board in its CLEP Program. Qualified students are encouraged to write the general and/or subject matter examinations of CLEP, with the result that college credit may be allowed upon entrance. In general, the Committee on Admissions accepts the score range recommendations of the College Board. Northeastern University has been designated a CLEP Testing Center. Inquiries may be addressed to Counseling and Testing Center, Room 302, Carl S. Ell Student Center Building.

## **APPLYING FOR ADMISSION AND PLANS OF ADMISSION**

### **Entry Dates**

Northeastern University admits students to all programs in September and also has a January entrance date for most of its programs. In addition, certain freshmen and transfer students may enter in the April and June quarters.

The application should be filled out properly, signed, and forwarded to the Dean of Admissions, Northeastern University, Boston, Massachusetts 02115. There is a \$15.00 application fee. Checks should be made payable to Northeastern University. It is to the student's advantage to submit his application for admission promptly. *The student is also responsible for making sure that his transcript and College Board scores are submitted to the University.*

### **Rolling Admission Plan**

Under Northeastern's Rolling Admission Plan, candidates may be notified of their acceptance at that point in their secondary school careers when there is sufficient evidence that they will be able to profit from study at the university level. This may occur early in the senior year or after the results of College Board Examinations have been evaluated. In all cases of acceptance, candidates are to successfully complete the senior year of high school.

### **Deferred Admissions Plan**

An increasing number of students seek information about deferring admission, perhaps to travel, or to improve their financial resources through employment before entering college. Accepted students who wish to participate in the Deferred Admissions Plan will be asked to describe the activities they plan for the coming year before enrollment. Information on the Plan is available from the Admissions Department.

### **Early Admission—Juniors, Second Semester Seniors**

In certain cases, students may enroll at Northeastern prior to high school graduation. Such students may enroll at Northeastern either in September or January, thereby reducing the time to complete degree requirements by one year. A special form provided by the Admissions Committee requires the endorsement of the school principal or guidance counselor for early admission. Write to the Department of Admissions for further details.

### **Freshman-year Alternative Program**

University College of Northeastern University was developed many years ago to serve those students whose needs were not fully met by traditional full-time college programs. In University College, lectures and instructional classes meet for somewhat longer periods of time but less frequently during the week; thus students taking a particular course may come to the University only once or twice a week instead of three or four times which is the standard pattern.

Through University College, students have the opportunity to plan a Freshman-Year Alternative Program with the assistance of our Admissions Department. This flexible pattern allows students who are not ready to assume a full load of courses to test their ability to do college work and sample different areas of interest prior to committing themselves to a specific major field of study.

Students enroll for ten quarter hours credit for the first academic quarter. Following the successful completion of this work, students, in collaboration with their counselors, may progress to 14 or 16 quarter hours of credit in their second or third terms, etc.

Students enrolling under this plan are regular Northeastern University students. Schedules are normally set so that much time remains within the week for employment. After successfully completing 40 quarter hours' credit, students can transfer to many of the Basic Colleges or stay with University College and obtain a degree. For further information, write to the Admissions Department.

### **Programs for Minority Group Students**

Northeastern University deliberately seeks to expand educational opportunities for deserving minority group students and to recruit promising students from economically and culturally disadvantaged backgrounds. In so doing, it has increased its guidance and other supporting services in order that such students may be assured the opportunity to succeed in their chosen fields of study. Supporting services include tutorial study and programmed instruction. These and other counseling services are provided by the University's African-American Institute.

### **Project Ujima Program**

"Ujima" is Swahili for "collective work and responsibility." The purpose of Northeastern's Project Ujima is to assist minority group students in developing their potential to the fullest extent.

This program is designed to make students aware of their potential and to urge them to strive forward with direction and purpose. Special programs such as minicourses, counseling seminars, tutorials, and training sessions are provided to meet the needs of high risk students.

### Open Campus Courses

Under Northeastern University's Open Campus Plan, qualified high school students who can gain release from their schools are invited to undertake collegiate study at Northeastern for credit while still enrolled in secondary school. In this way, the student is able to gain a better idea of the collegiate situation while he works toward college credit. For further information, write to the *Admissions Department*.

### Cooperative Freshman-Year Programs

#### College of Engineering

Each June, the College of Engineering will admit a certain number of students under a special Cooperative Freshman-Year Program.

Students may enter Northeastern University in the June following completion of their senior or junior years and complete Quarter One of their freshman year from June to September.

Graduating seniors will then continue their freshman academic program or undertake a cooperative work assignment. This first cooperative work assignment normally occurs either in the Winter Quarter (January to March) or in the Spring Quarter (April to June). Under special circumstances, and at the discretion of the faculty coordinator, freshmen may be placed in September, following completion of their first academic quarter. After this work assignment, the student will return to Northeastern and complete the freshman year. This schedule will be based upon the professional judgement of the Cooperative Education Department and the academic progress of the student.

By extending the freshman year, enrollees will have the opportunity to defray a considerable portion of their first year expenses.

Juniors will have the option of returning to their secondary schools following the summer term with credits earned toward a college degree or staying on at Northeastern, with the permission of their secondary schools, as members of the freshman class. If the student remains at Northeastern, he/she will then participate in a cooperative work assignment similar to those held by graduating seniors, either in the Fall or Winter quarters. For additional information, write to the Admissions Department.

#### College of Business Administration

Each June, the College will admit a certain number of students under a special Cooperative Freshman-Year Program.

Students who have completed their senior year may enroll for the Summer Quarter (June-September) and then remain for the Fall Quarter. They will start the cooperative work program in either the Winter or the Spring Quarter, assuming departmental permission.

Summer	Fall	Winter	Spring	Summer
1. School	School	Co-op or	School	Co-op
2.		School	Co-op	Co-op
3.		Co-op	Co-op	School

By extending the freshman year, enrollees will have the opportunity to defray a considerable portion of their expenses. The options will be limited to a relatively small number of students. For additional information, write to the Admissions Department.



## Special Students

A limited number of special students may be admitted to the Basic Colleges. Special students are not degree candidates, and must meet criteria set by the college.

Those admitted as special students usually have completed some college-level work. Applicants who may be considered are:

- a college or university graduate who needs additional course work to prepare or qualify for a graduate program;

- individuals, recommended by deans or program directors, who need particular formal course work to meet professional requirements for certification;

- students who need several courses to complete degree requirements at another college or university, provided they have written approval from the dean of their college; others who are recommended by deans of the colleges to take courses leading to regular admission. In such cases, however, Special Student enrollment should be limited to one academic quarter.

All special students will be charged a non-refundable application fee of \$15.00. Before obtaining and paying for an application, the potential special student should consult a counselor in the office of the dean of the college offering the course(s) desired. Tuition will be at the quarter-hour rate in effect at the time and must be paid before registration is valid. Special students will be admitted to classes only when there is space available.

All special students must obtain approval from the office of the dean of a Basic College prior to each quarter's registration, but will be required to pay the application fee only once.

They should contact the Dean of the college in which they wish to enroll.

## Foreign Students

Foreign students are required to complete and file the regular freshman or transfer application at least six months before registration. They must meet all admission requirements including the standardized tests administered by the College Entrance Examination Board. All academic credentials should be translated into English before forwarding them to the Department of Admissions. After notification of acceptance, students must pay the required deposits and complete the University's Declaration and Certification of Finances Form before an I-20 Form can be forwarded.

Students may obtain a copy of the Foreign Student Admissions Booklet by writing to the Department of Admissions.

Applicants for admission to the bachelor's program are expected to attain a TOEFL score of at least 450. The University will accept candidates with lower scores if they have demonstrated outstanding academic ability in secondary school. For both students whose native language is not English, and those with special language needs, Northeastern offers intensive English for International Students (without academic credit) and Freshman English for International Students (a full-credit alternative to the Freshman English course required of all students). Assignment is based on academic credentials and placement tests.

## ADMISSION OF TRANSFER STUDENTS

A student wishing to transfer into the Basic Colleges of Northeastern University may request advanced standing as an upperclassman on the basis of acceptable credits earned in an accredited two- or four-year institution or a technical institute.

### Basic Requirements

Full details of the University's transfer policy are available in the Transfer Booklet. This publication will be mailed to you upon request. Following are the basic requirements:

1. Only a candidate who presents satisfactory college records may be considered for advanced standing credit.
2. Credit will generally be given toward a NU degree for any reasonably equivalent course completed with a satisfactory grade at another accredited institution.
3. Candidates must be in good standing and eligible to continue in the institution they are currently attending.
4. Evidence of honorable dismissal and satisfactory health are required.

### Application Procedure

Complete transfer application for admission no later than July 1 if September entrance is planned. In certain programs, enrollment is possible at the beginning of each Northeastern quarter of study.

*Submit a high school transcript.*

*Request that an official transcript from each college attended be sent. This should include a list of courses which will be completed prior to the end of the academic year.*

NOTE: Transfer students are not required to complete entrance examinations.

### Financial Aid for Transfers

A number of scholarships, loans, and grants are available to qualified transfer students.

## REQUIRED DEPOSITS FROM FRESHMEN AND TRANSFER STUDENTS

If the Committee on Admissions makes a favorable decision on a student's application, he will be asked to submit a nonreturnable tuition deposit of \$100 by April 1. This deposit serves as an indication of his intention to enroll and is applied to his first-quarter tuition account. A dormitory deposit of \$100 is due at the same time for resident students. Requests to extend the deposit date to May 1 will be honored if they are submitted, in writing, to the Committee on Admissions no later than March 15. In certain programs, due to our waiting lists, extensions are not usually granted.

Accepted students who are recipients of a financial aid package from the University must submit deposit(s) by April 1. If this policy creates a financial hardship or other difficulty, we ask that you contact the Committee on Admissions.

Students applying for entrance other than in September should carefully read their certificate of acceptance which will indicate their required deposit dates.

## **GENERAL AND SPECIAL HEALTH REQUIREMENTS All Students**

Prior to registration at Northeastern, each applicant must submit evidence of a complete medical history and physical examination on a Student Health Service Form supplied by the University. This will include a Tuberculin Test performed within six months of the admission date. This information must be forwarded to the University physician for his review. Proper health clearance is considered a condition of admission.

Except in the most extreme instances, neither physical nor emotional problems are considered a bar to admission. In fact, we are actively encouraging handicapped students to become part of the University community. With pertinent information, we can usually make the adjustments to college life smoother and supply special aids when needed.

Sound health and physical fitness are especially important for students in the Boston-Bouvé College and the College of Nursing and are required by their nonuniversity affiliations. Candidates for admission to these colleges are therefore required to receive special health clearance prior to enrollment. A second health examination, by University Health Services, is given in the third year for students in Boston-Bouvé College and prior to affiliation for students in the College of Nursing.



## College Expenses

Students are advised that tuition rates, room and board charges, and fees are subject to revision by the Board of Trustees at any time. They should also note that the freshman year consists of three quarters of full-time study. The Cooperative Plan, whereby students may be gainfully employed, does not begin until the sophomore year.

The primary purpose of the Cooperative Plan is to provide invaluable on-the-job training, but it can make education possible without the accumulation of a large personal debt. Because of the Plan—and the University's determination to keep basic expenses as low as possible—many deserving students who might not otherwise be able to afford an education have attended Northeastern.

### EXPENSES FOR THE FRESHMAN YEAR (Three Quarters)

Tuition for the freshman year is \$2,610.00. For those who enroll in September, the tuition is payable in three installments at the beginning of the fall, winter, and spring quarters. For those who enroll in January, payments are due at the beginning of the winter, spring, and summer quarters.

Board and room expenses for those living in University-sponsored residence facilities vary slightly according to the dormitory to which a student may have been assigned. These costs are also paid in three installments at the beginning of each quarter, and are on a seven-day-a-week arrangement.

#### Total Freshman Expenses

Application Fee	\$ 15.00
Tuition	2,610.00†
Board and Room (if applicable)	2,100.00*†
Student Center Fee	37.50†
Infirmary Fee (if applicable)	60.00†
Health Services Fee	120.00
ROTC Deposit (if applicable)	25.00
(for uniform, equipment, etc.)	
Laboratory Deposit (if applicable)	20.00
(\$5.00 charge for extra cards)	
Books and Supplies	150.00
Personal Expenses	250.00

† Payable in three installments at the beginning of each freshman quarter: September 26, 1977, January 2, 1978, and April 3, 1978 (or for those who enroll in January, the dates would be January 2, 1978, April 3, 1978, and June 26, 1978).

\* This scale is for Speare and Stetson Halls. See Housing section, page 209.

#### SPECIAL NOTE:

Nonrefundable deposits of \$100 for tuition and \$100 for board and room are payable not later than April 1. These deposits are applied to the first quarter costs. The board and room deposit serves to reserve a space in a University dormitory.

Students who enroll in September will have a vacation period of 13 weeks between the freshman and sophomore years. Generally, Northeastern students use this period to earn money toward tuition costs.

## EXPENSE FOR UPPERCLASSMEN

	Tuition for Bouvé, Nursing, Pharmacy	Tuition for all other Colleges except Engineering	Tuition for Engineering
<i>Division A</i>			
September 26, 1977	\$1182.50	\$1172.50	\$1207.50
April 3, 1978	1182.50	1172.50	1207.50
<i>Division B</i>			
January 2, 1978	1182.50	1172.50	1207.50
June 26, 1978	1182.50	1172.50	1207.50
<i>*Division C</i>			
September 26, 1977	1182.50	1172.50	1207.50
January 2, 1978	1182.50	1172.50	1207.50
April 3, 1978	1182.50	1172.50	1207.50

*\* Division C is the term used to denote the classification of students who are temporarily or permanently on a noncooperative academic year. Certain students in the College of Liberal Arts may elect a noncooperative four-year program. In other colleges, this program is a temporary one sometimes required of transfer students to phase into the Cooperative Plan.*

## REQUIRED FEES FOR ALL STUDENTS

### Application Fee

A fee of \$15 is required when the application for admission is filed. This fee is nonreturnable.

### Accident and Sickness Insurance

The University provides an excellent hospital insurance and student health program. All students will pay a nonrefundable University Health Service fee of \$120 per year. This fee will cover the group Blue Cross-Blue Shield program and the medical services which are provided to students by the University Health Service.

### Student Center Fee

All students in the Basic Colleges on the Huntington Avenue campus are charged a fee of \$12.50 per quarter for the services available in the Student Center building.

### Graduation Fee

A fee of \$25 covering graduation is required by the University of all candidates for a degree. This fee must be paid before the end of the fifth week of the last scholastic quarter in the senior year. Candidates in the College of Nursing are required also to pay a charge of about \$10 for their graduation pin.

## BOSTON-BOUVÉ COLLEGE UNIFORMS

Students in the Physical Therapy program are required to purchase a uniform for physical therapy procedures and physical education; the cost is approximately \$20. The cost of required clinic uniforms for the senior year is approximately \$100.

## COLLEGE OF NURSING UNIFORMS

Students in the Associate Degree Program purchase uniforms in the fall quarter of the freshman year.

Students in the Baccalaureate Degree Program purchase uniforms in the fall quarter of the sophomore year.

## COLLEGE OF PHARMACY AND ALLIED HEALTH PROFESSIONS UNIFORMS

Students in Respiratory Therapy purchase uniforms in the spring quarter of the freshman year.

Students in Dental Hygiene purchase uniforms in the fall quarter of the freshman year.

Students in Radiologic Technology purchase uniforms in the fall quarter of the freshman year.

Students in the Medical Laboratory Science baccalaureate degree program purchase uniforms in the fall quarter of the junior year. Co-op assignments to hospitals will usually require uniform purchase in the fall quarter of the sophomore year.

## OTHER FEES

### Payment of Tuition

All payments should be made at the Bursar's Office. Checks should be made payable to Northeastern University. Beginning with the second week of any quarter, students are not eligible to attend classes unless their tuition has been paid or specific arrangements have been made with the Bursar for a plan of deferred payment. Deferred payment of tuition entails a fee of two dollars (\$2).

### Late Payment Fee

A fee of 10 dollars (\$10) will be assessed for failure to make or arrange for payments in accordance with the prescribed regulations.

### Laboratory Deposits

Students taking laboratory courses should be prepared to purchase laboratory deposit cards from the Bursar as directed by the department offering the course. These deposits will be charged with deductions for breakage and destruction of apparatus in the laboratory. A charge of five dollars (\$5) each is made for extra cards.

### Reserve Officers' Training Corps—Uniform Deposit

Freshmen enrolling in ROTC make a deposit of 25 dollars (\$25) to cover loss of or damage to ROTC uniform and equipment. Any loss or damage exceeding the deposit will be charged to the student.

### General

*Engineering students* should expect to pay approximately \$50 for drawing instruments and equipment. *Students in the College of Nursing* may expect to be assessed fees for clinical laboratory experiences. *Students in Education* pay a fee of \$586.25 for student teaching. Physical Education majors pay a room and board charge for a resident program at the Warren Center in the Spring Quarter. *Recreation Education* students pay \$170 for the cost of a two-week term of camping at the Warren Center. A one-week session in winter sports is optional for Recreation Education majors in their junior or senior year (at a cost of \$100) and a one-week session in skiing for middlers or juniors in *Physical Education* (at \$100).

A fee of \$8.50 per year is charged for liability insurance for freshmen in certain majors of the College of Nursing and the College of Pharmacy and Allied Health Professions, as well as all upperclass students in these colleges and Boston Bouvé College.

## REFUNDS

The University provides all instruction on an academic quarter basis for which students pay at the beginning of each quarter. Tuition refunds in all schools and colleges are granted through the first four weeks of a quarter only when specific conditions are met and on the basis of the date appearing on the official withdrawal application. (Nonattendance does not constitute official withdrawal.) Questions regarding refunds should be discussed with the Dean of Students' Office. When approved, refunds are made as follows:

### Tuition Refund

Official Withdrawal Filed Within	Percentage of Tuition
1st week of Quarter	100%
2nd week of Quarter	75%
3rd week of Quarter	50%
4th week of Quarter	25%

### Room and Board

Rental charges for rooms in University accommodations are refundable only in cases of withdrawal prior to the start of a quarter (except in special circumstances so adjudged by the University). Board charges are refunded for all unused portions when the food identification card is surrendered to the Office of the Dean of Students for Housing.

### Overloads

Tuition covers the cost of each student's required courses for a quarter. In addition, a course worth one quarter hour of credit may be taken without added charge. However, any other additional courses will be billed as overloads to the students taking them.

## Financial Aid

Financial assistance in the form of loans, grants, and work-study is available on an annual basis to qualified students. Undergraduate financial aid funds are administered in accordance with a nationally established policy and philosophy of financial aid for students pursuing a degree in higher education. It is a basic premise of this policy that parents have an obligation to pay for the education of their children to the extent that they are able to do so. Financial aid is available only for meeting the difference between a student's potential resources, (e.g. parent's contribution, summer or co-op earnings, outside agency awards, etc.), and his/her annual educational costs. The parent's contribution is determined by an objective analysis of the family's financial state: net income, number of dependents, allowable expenses, indebtedness, and assets. Criteria established by the College Scholarship Service are used in making the evaluation.

The University does not award any form of financial assistance to students who are not citizens or permanent residents of the United States.

### **Application Procedure** (Freshman Year)

Applicants seeking financial assistance for the freshman year are required to submit a copy of the Financial Aid Form (FAF) to the College Scholarship Service by January 15. This form is available from secondary school guidance offices or the Office of Financial Aid.

In addition to the above form, the applicant must file a Basic Educational Opportunity Grant Application and submit the results of that application to the Office of Financial Aid as soon as possible.

Awards are announced in mid-March for applicants who file before January 15. The awards take the form of a "package," combining scholarship, grant, loan and work-study employment. Awards may be adjusted at any time upon receipt of other funds or changes in financial status.

(See information below concerning State Scholarships and the Federal Basic Educational Opportunity Grant.)

### **Application Procedure** (Sophomore—Senior)

Applicants seeking financial assistance are required to submit a PCS or FAF form to the College Scholarship Service each year they apply for assistance. Upperclass applicants are also required to submit one "Upperclass Application for Financial Aid" in each of their upperclass years and file a Basic Educational Opportunity Grant Application and submit the results of that application to the Office of Financial Aid as soon as possible.

Financial aid awards are usually made for the entire academic year, and the application should be filed prior to the following deadlines:

Fall	April 15
Winter	August 15
Spring	November 15
Summer	January 15

(See information below concerning State Scholarships and the Federal Basic Educational Opportunity Grant.)



## STATE SCHOLARSHIP PROGRAMS

**The Office of Financial Aid strongly advises aid applicants to apply to state scholarship programs at the same time that they apply for aid from the University.**

The Commonwealth of Massachusetts provides scholarship aid to Massachusetts students pursuing full-time day programs of study in an accredited college or university. Awards are made in the summer of each year, and applications for entering freshmen are available through their high school guidance office. Out-of-state students should investigate aid programs in their respective states also. Substantial state aid is offered by Connecticut, New Jersey, Pennsylvania and Rhode Island.

## FEDERAL PROGRAMS

Please note that aid granted from programs funded by the federal Government is dependent upon the amount of funds allocated to Northeastern University.

### Basic Educational Opportunity Grant

This is a program of direct federal grants to college students. An eligible student could receive as much as \$1,400 per year towards his/her cost of education. Basic Grants are available to all students who have not previously received a bachelor's degree and who are not in this country on a student visa and are attending on at least a half-time basis. To utilize this program to the fullest as a base for your financial aid package, all students applying for aid must have evidence of application to this program. Applications for the B.E.O.G. Program are available at your local high school, public library, and other locations easily accessible to students. If unavailable at these locations, write to Basic Grants, P.O. Box 84, Washington, D.C. 20044.

### College Work-Study Program

This is a program of part-time employment under the sponsorship of the federal government. It is designed to help full-time undergraduate students meet their educational expenses. Students may work part-time while attending classes up to twenty hours per week. Eligible students may work for the University or for public or private non-profit off-campus agencies. The Office of Financial Aid has the responsibility of placing qualified students in their job assignments.

### Supplementary Educational Opportunity Grant

This is a program of direct awards sponsored by the Federal Government. They are available to a limited number of full-time undergraduate students who show evidence of having exceptional financial need and academic promise. Eligible students who are accepted for entrance may receive Educational Opportunity Grants ranging from \$200 to \$1,500 for each year of undergraduate education up to a maximum period of four years or its equivalent. The Federal government requires that an Educational Opportunity Grant (E.O.G.) be matched by a grant, loan or part-time employment which must be accepted by the student, if the E.O.G. portion of the award is to stand. Aid over and above the matching portion may be accepted or declined at the discretion of the recipient.

### Guaranteed Student Loan Program

Under this program, students who are matriculated degree candidates, enrolled for at least one-half the normal academic work load, may borrow from a participating bank or other financial institution. Terms and conditions vary from state to state, but a student generally may borrow up to \$2,000 a year (the law allows a maximum of \$2,500 per year) depending on financial need. The federal Government pays the interest while the student is in school if the student is eligible for interest subsidy.

Applications for the loan itself are available from local banks or the Education Office of your state government. Additional information and necessary application forms for Massachusetts residents are available from the Financial Aid Office.

**Health Professions Loan**

This program is available to full-time undergraduate students who have been accepted for a course of study leading to a Bachelor of Science degree in Pharmacy. A student who evidences financial need and academic promise may borrow as much as \$2,500 per academic year. Repayment of principal and interest does not begin until one year after the student ceases to pursue a full-time course of study. Repayment of principal may be extended over a 10-year period with interest at the rate of 3% per annum.

**Law Enforcement Loan**

This program is available to full-time students in a course of study leading to a Bachelor of Science degree in an area directly related to law enforcement. The applicant must evidence financial need and intend to pursue full-time employment in a law enforcement agency of a state or local government upon completion of his studies. The maximum loan is \$2,200 per academic year with no repayment of principal or interest beginning until six months after the student ceases to pursue a full-time course of study. Repayment of principal may be extended over a 10-year period with the interest at the rate of 7% per annum. Repayment may be deferred up to a maximum of four years while a borrower is serving in the Armed Forces.

Cancellation of up to 100% of the loan at the rate of 25% per annum may be allowed for each complete year of full-time employment in a public law enforcement agency.

**National Direct Student Loan**

This program is available to students who show evidence of financial need. Undergraduate students may borrow as much as \$1,500 each academic year up to a maximum of \$5,000 for their entire undergraduate education. Repayment and interest on these loans do not begin until nine months after the student ceases to carry at least a half-time academic load at an institution of higher education. The repayment of principal may be extended over a ten-year period with the interest at the rate of 3% per annum. Repayment may be deferred up to a total of three years while a borrower is serving as a Peace Corps or VISTA volunteer.

Borrowers who elect to teach the disadvantaged or handicapped may qualify for cancellation of their entire obligation over a seven-year period. Borrowers serving as full-time members of the Armed Services of the United States are entitled to cancel 12½% per annum of the principal outstanding on any loans for each year of such service up to a maximum cancellation of 25%.

**Nursing Student Loan**

This program is designed for full-time undergraduate students who have been accepted for a course of study leading to an Associate or Bachelor of Science degree in Nursing. Providing financial need is evident, a student may borrow as much as \$1,500 each year up to a maximum amount of \$6,000 for his/her entire undergraduate education. Repayment and interest on these loans do not begin until nine months after the student ceases to pursue a full-time course of study. The repayment of the principal may be extended over a 10-year period with the interest at the rate of 3% per annum.

Cancellation of up to 50% of the loan at the rate of 10% per year may be allowed for borrowers employed as professional nurses in any public (private) non-profit institution in an area having a substantial shortage of nurses.

**ROTC Scholarships**

(Refer to section on Reserve Officers' Training Corps.)

**Students should not apply for any specific scholarship. The University will award the particular scholarship to the student who qualifies for it.**

## SCHOLARSHIPS FOR FRESHMEN

### Alumni Scholarships All Colleges

Scholarship aid is available to entering freshmen who are relatives of alumni. Applicants must show evidence of scholastic achievement and financial need.

### Henry B. Alvord Memorial Scholarships In Civil Engineering Engineering

Established in 1940 in memory of the late Henry B. Alvord, Professor of Civil Engineering and Chairman of the Department for 18 years, the award is made annually to a student graduating from an accredited secondary school who demonstrates superior academic ability and gives promise of succeeding in civil engineering. The grant of \$250 is made only to an entering freshman who is qualified for and plans to study civil engineering.

**Armstrong Rubber Company  
Scholarships** All Colleges

Established in 1960, the Armstrong Rubber Company of West Haven, Connecticut, offers annually a scholarship in the amount of \$1,800, to a qualified boy or girl admitted to the University for a full-time program of study. Although children of Armstrong Company employees are given preference, any student residing in New Haven County is eligible to apply.

Recipients of the scholarship will participate in the University's cooperative program and will be expected to spend at least four periods of student employment with the firm. Scholarship applications are available from the Company upon request and should be returned to the Personnel Office no later than April 30 of the year in which the student plans to enter the University.

**Badger Company, Inc., Grant  
Program** Engineering

The Badger Company, Inc., has made available to Northeastern University two grants of \$1,200 each to be given to first-year students. Recipients must be from secondary schools in the Greater Boston area and have been accepted into the College of Engineering. Summer employment shall be available to the recipient(s) of the grant during the summer before their matriculation at the University; and cooperative work will be offered as long as positions are available during their undergraduate years.

**George L. Barnes Scholarship**  
All Colleges

This fund was established in 1969 by Miriam P. Poole, daughter of George L. Barnes, in memory of her father, a distinguished member of the Northeastern University Corporation and Board of Trustees from 1937 until his death in 1965.

The income from this fund will provide a full scholarship annually to some deserving student from Weymouth, Massachusetts. The award is made on the basis of need and character. Some additional assistance may be given in the upper-class years.

**The Barry Scholarship**  
Engineering

The Barry Scholarship, established in 1973 by the Barry Division of Barry Wright Corporation, is available to students in the College of Engineering. Preference will be given to mechanical engineering majors and sons and daughters of Barry employees, based upon demonstrable financial need and academic achievement.

**The Godfrey L. Cabot Scholarship  
Fund** All Colleges

This fund was established by Dr. Cabot in 1954 to help meet the college expenses of employees or children of employees of Godfrey L. Cabot, Inc., and its subsidiary and associated companies. To be eligible, the employee must have completed at least five years of service to the company prior to the time the student enters the University. The University shall determine the number and amount of these scholarships, which are not limited to outstanding students and which are available to evening as well as day students. Students interested in applying for scholarship aid from this fund should communicate with the Cabot Personnel Office or the Office of Financial Aid at Northeastern University.

**The Gardner A. Caverly  
Scholarship** All Colleges

This scholarship was established in 1957 through the generosity of Mr. Gardner A. Caverly, an alumnus of the College of Business Administration and a member of the Class of 1934. Its purpose is to provide financial assistance and encourage qualified students from the New England area to attend Northeastern University. In selecting worthy students for these scholarship awards, preference is given to graduates of the Rutland, Vermont, and Laconia, New Hampshire high schools.

**Community Scholarships**  
All Colleges

The Community Scholarships were established by President Asa S. Knowles during the period 1963-1973. These scholarships stipulate that Northeastern will provide full freshman tuition for qualified students from the following communities:

Boston — three scholarships at each of the seven high schools; Ashland — three scholarships; Burlington — three scholarships; Weston — three

scholarships; Framingham — two scholarships; Weymouth — two scholarships; Haverhill — two scholarships; Lynn — two scholarships; Norwood — two scholarships, and Brookline — three scholarships.

**The Cotrell Company Engineering  
Scholarship Engineering**

In 1961, the Cotrell Company of Westerly, Rhode Island, established an annual scholarship of \$1,000 to be awarded to a senior in the upper fourth of his class attending a high school in the Westerly area or to a senior in any high school who is the son of an employee of The Cotrell Company. Selection preference will be given to sons of employees and to students who have a long-range interest in the specialized fields of mechanical, electrical, and industrial engineering.

**Carl W. Christiansen Scholarship  
Business Administration**

The Carl W. Christiansen Scholarship Fund was established in 1976 by Mr. Carl W. Christiansen, a graduate of the School of Commerce and Finance, Providence Division of Northeastern University, Class of 1923. Early in his career, Mr. Christiansen was an accounting instructor and associate dean in the Providence Division. In 1927, the accounting firm of Christiansen, Murphy, and Company was founded, and in 1940, it became known as Christiansen and Company-Certified Public Accountants. The income from this fund is to be awarded annually to an entering freshman in the day College of Business Administration who has demonstrated the necessity for financial aid. Preference will be given to students from the state of Rhode Island interested in pursuing a career in accounting.

**The William O. DiPietro  
Scholarship Engineering**

This scholarship was established in 1967 through the generosity of Mr. William O. DiPietro, a distinguished alumnus of the College of Engineering and member of the Class of 1942. The scholarship is awarded annually to one or more deserving freshmen who demonstrate a high caliber of achievement and a desire to fulfill the limits of their ability in both academic and cooperative periods of study. In considering recipients for this scholarship, preference will be given to freshmen enrolled in the College of Engineering who have a desire to major in Chemical Engineering. It is intended that those students receiving awards from this scholarship might someday contribute to this or other scholarships themselves, thereby perpetuating growing funds that will help other deserving individuals.

**The Harry Doebla Memorial  
Scholarship All Colleges**

The Harry Doebla Memorial Scholarship was established in 1974 in memory of Mr. Harry Doebla, founder and president of Doebla Greeting Cards, Inc. During his lifetime Mr. Doebla provided much financial assistance to young people of limited means to help them in furthering their educational goals.

The awards from this fund are available to undergraduate day students with preference being given to graduates of Fitchburg High School, Fitchburg, Massachusetts, and Nashua High School, Nashua, New Hampshire. Additional consideration will be given to children of employees of Doebla Greeting Cards, Inc.

**Carl Stephens Ell Alumni  
Scholarships All Colleges**

To honor Dr. Carl Stephens Ell, the second president of Northeastern University, the Alumni Association established these scholarships in 1958. Either freshmen or upperclassmen enrolled at the University are eligible. Awards will be made to worthy students on the basis of scholastic ability and need. The scholarships are to be distributed as equitably as possible among students in the Basic Colleges and University College. Preference shall be given to sons and daughters of Northeastern Alumni.

**The George Raymond Fennell  
Memorial Scholarships  
Business Administration**

Two full-tuition scholarships are awarded each year to first-year students enrolled in the College of Business Administration. The scholarships are awarded in memory of George Raymond Fennell, formerly Assistant Director of Admissions and Director of the Northeastern Student Union.

**The Nathan Gerber Memorial  
Scholarship** All Colleges

The Nathan Gerber Memorial Scholarship was established in 1974 by Albert Gerber E52 and Robert Gerber E60 in memory of their father, Nathan, a member of the Class of 1925. The scholarship is to be awarded annually to a student or students enrolled in the freshman class with a demonstrable financial need. Selection is made by the Committee on Scholarships.

**Charles Hayden Memorial  
Scholarships** All Colleges

The Charles Hayden Foundation, created by the will of the late Charles Hayden, an alumnus of the Boston English High School, offers annual memorial scholarships to freshmen at Northeastern University. The scholarships are awarded to "deserving boys" whose parents are unable to finance the entire cost of their education.

**The Edward L. Hurtig  
Scholarships** All Colleges

This scholarship was established in 1968 through the generosity of the Hurtig family in memory of Edward L. Hurtig, an alumnus of the College of Engineering, Class of 1946. The scholarship is awarded annually to an entering freshman in the day colleges who has demonstrated the necessity for financial aid. Preferences will be given to recipients of the Educational Opportunity Grants Scholarship Program of the United States Office of Education.

**The Maurice A. and Nellie L.  
Idelson Award** All Colleges

This award, established in 1968, is given annually to an entering freshman in the day colleges who has demonstrated the need for financial aid. Preference will be given to graduates of the Boston English High School. Should there be no qualified candidate from this source, the award will then be given to any worthy student.

**The Martin Luther King, Jr.  
Scholarship**

The Martin Luther King, Jr. Scholarship is granted annually to incoming freshmen, graduate, and transfer minority students who have demonstrated the philosophy of peaceful co-existence and change through nonviolent means espoused by Dr. King, and who have an above average scholastic record. The scholarship, in the amount of \$500, requires a minimum grade point average and, based on other criteria, is renewable. Financial aid based on need is available to supplement the scholarship.

**Merchants Tire Company  
Scholarships Fund**  
Business Administration

This scholarship was established in 1972 by Merchants Tire Company in honor of Max Katz, a Class of 1917 alumnus of Northeastern and founder and chairman of the board of Merchants Tire Company. The scholarship is awarded annually with selection preference given to a son or a daughter of a current employee of Merchants Tire Company, who is enrolled as a freshman within the College of Business Administration and demonstrates financial need, soundness of character and academic stability.

**Power Systems Engineering  
Grants-in-Aid**  
Electrical Engineering

A number of public utilities and power equipment manufacturing companies in the northeastern part of the United States have made available grants-in-aid ranging from \$1,000 to \$1,800 to assist able freshmen who are planning to undertake the six-year integrated cooperative program in power systems engineering leading to the degrees of Bachelor of Science and Master of Science in Electrical Engineering. These awards are made on the basis of academic achievement in high school and aptitude for and interest in the field of power systems engineering, without regard to financial need.

Candidates for such grants-in-aid should apply to the Dean of Admissions at Northeastern University not later than March 1 of the year in which they wish to enter the College of Engineering.

**Regional Scholarships**  
All Colleges

Secondary school students who reside in rural areas of New England, who have demonstrated superior achievement in their studies, and who are strongly endorsed by their principals and guidance counselors, may qualify for a Regional Scholarship. Scholarships range from \$200-\$1,400.

**Reserve Officers' Training  
Corps Scholarship Program**

(Refer to section on Reserve Officers' Training Corps.)

**Clinton H. Scovell  
Scholarships** Boston-Bouve

Scholarships are made available annually to men and women students in the College of Business Administration at Boston-Bouvé College through a fund provided by the will of Clinton H. Scovell.

**The Sidney L. Sholley  
Memorial Scholarships**  
All Colleges

The Sidney L. Sholley Memorial Scholarships have been established by the Trustees of the Keystone Charitable Foundation in memory of Mr. Sidney L. Sholley, founder and first president of the Keystone group of mutual funds. Two scholarships of \$600 each will be awarded annually to incoming freshmen. Recipients of the scholarships will be known as the Sidney L. Sholley Memorial Scholarships.

**Spofford Scholarship Fund**  
All Colleges

The Spofford Scholarship is awarded annually to an American Negro, American Indian, or multi-racial freshman who demonstrates severe financial need.

**Trustee Scholarships**  
All Colleges

Established in 1928 by the Board of Trustees of Northeastern University, these full- and partial-tuition scholarships are granted in the Basic Colleges each year to entering freshmen who have demonstrated superior scholastic attainment throughout their preparatory or high school courses.

**Western Electric Scholarships**  
Engineering

In 1973, Western Electric provided Northeastern University with a generous five-year grant, one-half of which is restricted for use as scholarship aid to first-year students admitted to or enrolled in the College of Engineering who demonstrate financial need and soundness of character. Western Electric Scholarships will be awarded through the academic year 1977-1978.

## SCHOLARSHIPS FOR UPPERCLASSMEN

**Dr. Martin E. Adamo  
Scholarship** Pharmacy

This scholarship of \$100 is given annually by the Boston Association of Retail Druggists in memory of Dr. Martin E. Adamo, the second president of the New England College of Pharmacy.

**The Vivian B. Allen  
Scholarships** Nursing

The Vivian B. Allen Foundation Endowment for nursing scholarships was established in 1968 through the generosity of the Vivian B. Allen Foundation, Inc. The income from a \$500,000 endowment fund is to be used to provide scholarship assistance for students entering or enrolled in the College of Nursing at Northeastern University. The application procedures and qualifications for selection are the same as those for all other scholarships.

**American Foundation for  
Pharmaceutical Education  
Scholarships** Pharmacy

The Board of Grants of the American Foundation for Pharmaceutical Education provides three scholarships of \$200 each to be awarded to junior or senior students on the basis of scholarship and financial need with the understanding that the University will match the awards to the students selected. The use of the funds is restricted to the payment of tuition and laboratory fees.

**The Boston Section of the  
American Society for Quality  
Control Scholarship** All Colleges

This annual award was established in 1961 by the Boston Section of the American Society for Quality Control to provide assistance to a student enrolled in a collegiate program which will prepare him for a constructive career in the broad field of quality control. The recipient must have completed his second year; and in his education or work experience, he must have demonstrated an interest in the broad field of quality control.

The Boston Section has an extensive educational program for those whose work requires an increasing knowledge of quality control, and it is active in enhancing the standards in this field.

**The Henry Francis Barrows  
Scholarships** All Colleges

Established in 1949, the four Henry Francis Barrows Scholarships provided under the will of Fanny B. Reed are offered to Protestant young men, born and brought up in New England. Good scholastic standing, good character, and need must be demonstrated by recipients of the scholarships.

**The Mr. and Mrs. Emil  
Matthew Bauer Fund**  
All Colleges

The interest from the Fund, established in 1954, is used for scholarships or other financial assistance to students of German birth or of German extraction studying at Northeastern University. The scholarships are available to either men or women students enrolled in any year at the University.

**Board of Higher Education  
Scholarships** All Colleges

This program was established in 1957 by the Commonwealth of Massachusetts to provide scholarship aid to Massachusetts students pursuing full-time day schedules in accredited colleges. Awards are made in the fall of each year, and applications for upper-class students are available during April in the Office of the Director of Financial Aid for Students.

**The Boston Paper Trades  
Association, Inc., Scholarship**  
Business Administration

Established in 1966 by the Boston Paper Trades Association, Inc., this is an annual scholarship awarded to a junior or senior who has demonstrated by his cooperative work achievement and his extracurricular activities an interest and potential in the field of sales. The recipient must be of high character, have a good academic record, and be able to demonstrate financial need.

**The Boston Rubber Group  
Scholarship**  
Chemistry, Chemical Engineering

This scholarship, established in 1962, is to be awarded, in whole or in part to one or more chemistry or chemical engineering cooperative students on the basis of merit, need, scholarship, and personal qualifications. The Boston Rubber Group Scholarship is sponsored by the Division of Rubber Chemistry, American Chemical Society.

**Boston Society of Civil  
Engineers Scholarship in  
Memory of Desmond  
FitzGerald** Civil Engineering

In 1931, the Boston Society of Civil Engineers established a scholarship in memory of Desmond FitzGerald, a former president of the Society and an eminent hydraulic engineer with a distinguished record of service.

It has been awarded annually since 1931 to an outstanding Northeastern University senior or junior student in the Department of Civil Engineering of the College of Engineering. The presentation is made by the President of the Boston Society of Civil Engineers at the Society's annual meeting in the spring of the year.

**Martin Brown Scholarship  
Fund** Engineering

This scholarship was established in 1961 by Mr. Martin Brown, an engineering alumnus of the Class of 1921. Its purpose is to assist qualified students enrolled in the College of Engineering who have need and have demonstrated above-average scholastic ability.

**Wellington Burnham Fund**  
All Colleges

This fund provides financial assistance to worthy students of limited means without discrimination as to race, creed, color, or scholastic attainment. It was established in 1961 under the provisions of the will of George A. Burnham.

**The Camp, Dresser and McKee  
Scholarship** All Colleges

This Scholarship was established in 1973 by Camp, Dresser and McKee, Inc. and is available to students in all colleges. Preference will be given based upon demonstrable financial need and academic achievement.

**Louis S. Cashman Memorial  
Scholarship Fund**

Business Administration

Established by the Massachusetts CUNA Credit Union Association and friends of Mr. Cashman in recognition of his outstanding service to the credit union movement in the Commonwealth.

This scholarship is awarded annually to students in the College of Business Administration who have need with particular preference given to those enrolled in Banking and Finance.

**The William M. Cavanaugh  
Memorial Scholarship**

All Colleges

This award, established by the members of the Publicity Club of Boston, is open to men and women of the junior and senior classes who demonstrate talent in the field of communications. The scholarship of \$100 bears the name of the second president of the Publicity Club (1950-1951) who was an able and successful newspaper man.

**Chemical Club of New England**

Chemistry, Chemical Engineering

To promote interest in the chemical engineering field in New England, the Chemical Club of New England has made generous scholarships available to junior and senior students who are majoring in chemistry or chemical engineering and who show promise of success in either field.

Recipients of these scholarships must be residents of New England and have financial need, above-average grades, and a good cooperative work record.

**Civil Engineering Department**

Award Civil Engineering

The Civil Engineering Department Award was established by members of that department to recognize achievement and give financial assistance to a student who has elected a major in the field of civil engineering. This award, in the amount of \$100, is financed by gifts from members of the Civil Engineering Department and is awarded to the recipient at the beginning of his/her sophomore year.

**Ruby H. Cole Scholarship**

Fund All Colleges

The Ruby H. Cole Scholarship Fund was established in 1973 under the Will of Mrs. Cole, late of Boston, Massachusetts. The income from the fund is awarded annually to one or more female students enrolled in or admitted to undergraduate programs of the Basic Colleges of the University and who are graduates of Girls High School, Roxbury, Massachusetts. Recipients must demonstrate financial need, academic stability and soundness of character.

**The Compugraphic Corporation**

Scholarship Fund All Colleges

The Compugraphic Corporation Scholarship Fund has been established and endowed at the University with a generous gift from an individual. The income from the scholarship fund is to be used annually as financial assistance for persons who are admitted to or enrolled in full-time undergraduate programs of the Basic Colleges of the University and who demonstrate financial need, academic stability and soundness of character. Scholarships will be tuition grants and will be awarded to persons who are otherwise eligible and who are, at the time of the grant, children of current employees of Compugraphic Corporation.

**Connecticut Alumni Rudolf O.**

Oberg Scholarships

Each year the Connecticut Alumni Club awards scholarships to students from the State of Connecticut who have achieved a high academic average in their freshman year and have demonstrated financial need. The scholarships are to be used toward the tuition expense of the sophomore year. These scholarships were established in 1958 to promote Northeastern University among the preparatory schools of Connecticut and, in 1971, were named to honor Rudolf O. Oberg, the former Director of Alumni Relations.

**John W. Dargavel Foundation**

Scholarship Pharmacy

This scholarship was established in 1964 by the John W. Dargavel Foundation, sponsored by the National Association of Retail Druggists. The award is limited to students who have completed their sophomore year in the College of Pharmacy and Allied Health Professions.



**Charles M. Devlin  
Scholarship** All Colleges

This fund was established in 1976 by the members of the Class of 1970 "in honor of our dedicated adviser," Charles M. Devlin. The income from the Fund, will be awarded annually to upperclassmen with proven ability and demonstrable financial need. Preference will be given to children of members of the Class of 1970.

**The Diamond Anniversary  
Development Program  
Scholarship** All Colleges

This scholarship has been established to commemorate the successful conclusion of the Diamond Anniversary Development Program. This Scholarship Fund recognizes the loyalty and generosity of the thousands of alumni and friends, corporations, foundations, and organizations whose significant contributions of time and resources have brought Northeastern University to "that greatness which is its destiny."

Three \$1,000 scholarships will be awarded annually, as follows: to one or more full-time students enrolled in a cooperative education program within a basic college of the University; to one or more part-time students enrolled in a basic college of the University; and to one or more full-time students enrolled in the graduate division or a professional school of the University. Consideration will be based upon financial need, academic stability, and soundness of character.

**The Cpl. James B. Downey USMC  
Scholarship Fund** All Colleges

This scholarship was established in 1970 through the generosity of Mr. William J. Downey, a graduate of the College of Liberal Arts, Class of 1952, in memory of his brother, Cpl. James B. Downey USMC. The scholarship is to be awarded annually to an upperclassman in the day colleges who has demonstrated the necessity for financial aid.

**Luis de Flores Endowment  
Fund** All Colleges

This fund was established in 1964 to provide yearly awards to students in recognition of superior ingenuity, irrespective of general academic standing.

**Agnes F. Driscoll Scholarship  
Fund** All Colleges

This fund will provide scholarship assistance to students in their upper-class years who have demonstrated financial need and scholastic attainment.

**Electrical Manufacturers  
Representatives Club of New  
England, Inc., Scholarship**  
Electrical Engineering

Established in 1958, this scholarship of \$475 is granted to a student or students majoring in electrical engineering, without regard to race, creed, or color. To qualify, students must have real financial need and excellent scholastic standing.

**Carl Stephens EII Alumni  
Scholarships**

(For description of this scholarship, see page 192.)

**Elmer H. and Daisy M. Everett  
Memorial Scholarship**  
All Colleges

This Scholarship was established through a bequest of Elmer H. and Daisy M. Everett, both alumni of Northeastern University. Mr. Everett graduated from the College of Engineering and Mrs. Everett graduated from the School of Business. They are both members of the Class of 1934. Mr. and Mrs. Everett had the strong conviction to help young people wanting to further their education. The fund will be administered by the Office of Financial Aid.

**Clara and Joseph F. Ford  
Scholarship Fund** All Colleges

A fund established by Clara and Joseph F. Ford to provide tuition scholarships for worthy, needy, and well-qualified students who have demonstrated a democratic and tolerant spirit and who are well disposed toward people of all creeds and races.

**Gilman Brothers Inc.  
Scholarship** Pharmacy

This scholarship of \$250 is given annually by Gilman Brothers, Inc. to help a student further his education in pharmacy.

**The Foster Grant Scholarship**

All Colleges

This scholarship, established in 1974 by the Foster Grant Co., Inc. of Leominster, Massachusetts, is available to students in any of the full-time undergraduate colleges. Preference will be given to children of employees of Foster Grant Co., Inc. Basis for the award will be demonstrable financial need and above-average academic achievement.

**Clifton W. Gregg Memorial Scholarship**

All Colleges

This scholarship was established through a bequest of Clifton W. Gregg, a 1915 graduate of the School of Commerce and Finance of Northeastern University. It was Mr. Gregg's request that "the income from this fund be used for the assistance of financially needy students." The award may be made annually. Recipients will be determined by the Committee on Scholarships.

**Rabbi Myer O. Grunberg Scholarship**

All Colleges

Established in 1953 by Mrs. Myer O. and Miss Rose Grunberg, this annual award is available to a senior student in any college of the University. The award is made to that man or woman student who has evidenced in personal, business, and student relations those characteristics of leadership and human relations which make for a better social order. There is no restriction as to race, creed, color or sex.

**The Walter F. Howe Memorial Scholarship**

Business Administration

This fund was established in memory of Walter F. Howe, Class of 1968, who within one week after graduation was fatally wounded living up to his ideals of good citizenship and civic responsibility. Walter was tragically slain while pursuing thieves who had stolen his landlord's car. The scholarship was established through the generosity of Walter's friends and relatives and is awarded annually to a student in the College of Business Administration who demonstrates not only financial need but good citizenship and civic responsibility. The scholarship is open-ended so that additional sums can be added to it in future years and will be awarded by the University without restrictions as to race, color, geographic origin, or scholastic attainment.

**Joseph Anthony Johnson Scholarships**

Engineering

Established in 1968 by the will of the late Joseph Anthony (Johansen) Johnson of the Class of 1928, the income provides scholarship aid for students enrolled in the Department of Mechanical Engineering, with preference given to students of Scandinavian origin.

**Dr. LeRoy C. Keagle Memorial Scholarships Fund**

Pharmacy

The Dr. LeRoy C. Keagle Memorial Scholarship Fund was established in 1975 through the generosity of family and friends of Dr. LeRoy C. Keagle, a man of high integrity and commitment to the profession of pharmacy who, at the time of his death on December 15, 1974, was Dean of the College of Pharmacy and Allied Health Professions at Northeastern University. The income from this Scholarship Fund is awarded annually to a student in the undergraduate Pharmacy Program who is entering the junior or senior class. Recipients must demonstrate financial need, academic stability, and soundness of character.

**Vena Morse Lamson Scholarships**

All Colleges

These scholarships are provided through the income of a fund established in 1963 by Horatio W. Lamson in memory of his beloved wife. They are awarded annually to needy and worthy students who are enrolled in any of the Basic Colleges of the University. The Scholarships are granted by the Committee on Financial Aid of the University without regard to national origin, sex, race, or creed.

**The Irving Landfield Scholarship**

All Colleges

This fund was established in 1972 through the generosity of Irving Landfield, a graduate of the School of Commerce and Finance of Northeastern University, Class of 1923. The income from the fund is to be awarded annually to help deserving and needy students who demonstrate a desire to fulfill the limits of their ability in academic and cooperative periods of study. The income from this fund will be administered and awarded by the University without restriction as to race, color, creed, geographic origin, or scholastic attainment. It is Mr.

Landfield's desire that recipients of the scholarship assume a moral obligation to contribute to the principal of this fund as they may be able, in order to make additional financial aid available for other students in later years.

**Avrom Aaron Leve Memorial  
Scholarship** Psychology

This scholarship fund was established in 1957 in memory of Dr. Avrom Aaron Leve, former Assistant Professor of Psychology. The interest is used annually to provide scholarships for upper-class students majoring in psychology. The award is made on the basis of academic achievement, financial need, and character.

**Russell T. Lowe Memorial  
Scholarship Fund**  
College of Engineering

This fund was established in 1976 in memory of Russell T. Lowe, a graduate of the College of Engineering, Class of 1953. The endowment funds were provided by the friends and associates of Russell Lowe and the Barry Wright Corporation, where he served as a member of the Board of Directors and as President of the Industrial and Aero Products Group. The income from the fund will be awarded annually to one or more upperclass students enrolled in the College of Engineering. Preference will be given to Mechanical Engineering majors based upon demonstrable financial need and above average scholastic achievement.

**Dr. Reuben J. Margolin Memorial  
Scholarship Fund** Education

The Dr. Reuben J. Margolin Memorial Scholarship Fund was established in 1973 through the generosity of family and friends of Dr. Reuben J. Margolin, an outstanding and dedicated individual and friend who, at the time of his death on April 6, 1972, was Chairman of the Department of Rehabilitation and Special Education at Northeastern University.

The income from the Dr. Reuben J. Margolin Memorial Scholarship Fund is awarded annually to a deserving student admitted to or enrolled in the College of Education or the Graduate School of Education and majoring in Rehabilitation and/or Special Education. Recipients must demonstrate financial need as well as the personal and professional qualities exemplified by Dr. Margolin.

**George T. Marvin Scholarship  
Fund** All Colleges

This fund was established in 1961 under the provisions of the will of George T. Marvin, a graduate of the Northeastern University School of Law, Class of 1918. Mr. Marvin designated that the income of this fund should be used to provide financial assistance to worthy and needy students to assist them in furthering their education at Northeastern University.

George T. Marvin Scholarships may be awarded to new students seeking admission to Northeastern and to students enrolled as freshmen and upper-classmen. Applicants must have satisfactory records of scholarship as of the time of making application and must demonstrate genuine need and good citizenship.

**Massachusetts State  
Pharmaceutical Association  
Scholarship** Pharmacy

This scholarship of \$200 established by the Massachusetts State Pharmaceutical Association is awarded annually. The recipient must be a resident of Massachusetts.

The Massachusetts State Pharmaceutical Association also awards a number of scholarships of \$100. Applications for these scholarships may be secured from the office of the Association at 11 Beacon Street, Boston.

**Frederick W. Muckenhaupt  
Scholarship** All Colleges

This award was established in 1961 by Dr. and Mrs. Carl F. Muckenhaupt in memory of their son, Frederick W. Muckenhaupt, Class of 1959 of the College of Engineering.

The award is to be made annually to a student in good standing on the basis of need. Preference is given to a student enrolled in the Department of Electrical Engineering.

**Elizabeth A. Neilson  
Scholarship** Boston-Bouvé

The Elizabeth A. Neilson Scholarship Fund was established in 1976 in memory of William H. and Anastasia Neilson, exemplars of the profession of health edu-

cation during their lifetimes. The income from the scholarship fund is awarded annually to a student majoring in health education who has completed at least one full year as a degree candidate in Boston-Bouv  College. The student must demonstrate financial need and scholastic achievement and must typify the philosophy of the health education profession.

**The New England Paper  
Merchants, Inc., Scholarship**  
All Colleges

Established in 1959 by the New England Paper Merchants Association, Inc., this is an annual scholarship awarded to a junior or senior who has demonstrated by his cooperative work achievement and his extracurricular activities an interest and potential in the field of sales. The recipient must be of high character, be able to demonstrate financial need, and have a good academic record.

**Norfolk County Pharmaceutical  
Association Scholarship**  
Pharmacy

This scholarship of \$50 is awarded annually to a student who meets the requirements both financially and scholastically and is a resident of one of the member towns covered by the Norfolk County Pharmaceutical Association (Norwood, Dedham, Canton, Walpole, Millis, Needham, Westwood, and Islington).

**Pilot Freight Carriers Scholarship**  
Business Administration

The Pilot Freight Carriers Scholarship is awarded annually to an upperclass student of Business Administration who has achieved an outstanding academic record and who is interested in a career in the field of transportation. The amount of this award is \$500.

**The Mildred A. Reardon  
Scholarship Award** All Colleges

Delta Pi Alpha Sorority sponsors an annual award of \$100 to a deserving coed in the Basic Colleges. Selection is made by the Dean of Women on the basis of financial need and academic standing. The award is given in honor of an outstanding alumna of Northeastern and Delta Pi Alpha, whose academic excellence, strength of character, and qualities of leadership have typified the ideal for which the sorority strives.

**The Gay Miller Reese Memorial  
Scholarship** Boston-Bouv  College

The Gay Miller Reese Memorial Scholarship was established in 1971 by Everett Reese, in memory of his wife, and by members of the Class of 1921 at their 50th Reunion in honor of their classmate and Class President, Gay Miller Reese. This scholarship is to be awarded annually to help a well-qualified upper-classman in Boston-Bouv  College acquire the education he or she could not otherwise afford. The recipient of this award will be selected by the Committee on Scholarships.

**The Myer Riesman Scholarship**  
Nursing

This fund, established in 1969 in memory of Myer Riesman, is used to provide financial assistance to deserving students in the College of Nursing. Preference is given to those students whose clinical experience is at Beth Israel Hospital.

**Frank B. Sanborn  
Scholarship Fund** Engineering

The Frank B. Sanborn Scholarship Fund was established in 1958 to provide a scholarship or scholarships of not more than \$500 to worthy and needy students selected by the University, without restrictions as to race, creed, or geographic origin, but with preference being given to students majoring in electrical, mechanical, civil, or industrial engineering, in the order stated.

Each recipient must be willing to assume a moral obligation to reimburse the fund as he may be able, to make similar financial aid available for other students in later years. There shall be no interest charged and no time specified for reimbursement.

**Clinton H. Scovell  
Scholarships** Boston-Bouv 

Scholarships are made available annually to students in Boston-Bouv  College through a fund provided by the will of Clinton H. Scovell.

**John Stuart Sousa, Jr. Memorial  
Scholarship Fund Pharmacy**

This scholarship was established in 1968 in memory of John S. Sousa, Jr., of Fall River, Massachusetts, a student in the College of Pharmacy, Class of 1969, by his family and friends. The scholarship is awarded annually with selection preference given to a male student entering his senior year in the College of Pharmacy and Allied Health Professions who has obtained a cumulative quality point average of 2.300, demonstrates financial need, participates in extracurricular activities and is preferably a member of a fraternity.

**William Lincoln Smith Scholarship  
Fund Electrical Engineering**

The fund was established in 1947 by Farnham Wheeler Smith, Class of 1924, Benjamin Lincoln Smith, Class of 1923, Thomas Hollis, Jr., Class of 1941, and other members of the family in honor of Dr. William Lincoln Smith, who served long, faithfully, and with distinction as Chairman of the Department of Electrical Engineering at Northeastern University.

The income from the fund is used for an annual scholarship award to a student enrolled in the Department of Electrical Engineering who has demonstrated excellence in some aspect of electrical research, stands high in his courses, or otherwise exhibits promise of future competence in the field. The award shall preferably be granted to a student who needs financial assistance to continue his college work.

**George A. and Lorraine  
C. Snell Scholarship  
All Colleges**

This fund was established in 1973 by Mr. George A. Snell, a graduate of the College of Engineering, Class of 1941, and a member of the Northeastern University Corporation and Board of Trustees, and his wife Lorraine C. Snell.

The income from the fund is to be awarded annually to one or more students enrolled in the basic colleges of Northeastern University. Selection will be made by the Committee on Scholarships based upon those candidates who demonstrate financial need, academic stability, and soundness of character.

**Professor Joseph Spear Fund  
for Excellence in Student Activities  
Engineering**

This fund was established by the Class of 1923, College of Engineering, in recognition of Professor Spear, their class adviser and mentor. It was through Professor Spear's devotion and concern for the well-being of the students that he developed and promoted student activities at Northeastern University. Professor Spear has been referred to as the "Father of Student Activities." The purpose of this fund is to provide a source of income that can be awarded annually to juniors and seniors of the Day College of Engineering who have made outstanding contributions to student activities.

**South Middlesex Pharmaceutical  
Association Pharmacy**

This tuition scholarship of \$100 established in 1960 is awarded annually to a pharmacy student enrolled in the third, fourth, or fifth year who is in good scholastic standing and in financial need, and living in the area covered by the South Middlesex Pharmaceutical Association (Arlington, Belmont, Lexington, and Watertown). The recipient will be selected by the Scholarship Committee.

**South Shore Pharmaceutical  
Association Scholarship Pharmacy**

The Scholarship Committee of the Association will select a freshman student in June of each year living in the area covered by the South Shore Pharmaceutical Association (Quincy, Braintree, Weymouth, Hull, Randolph, Hingham, Holbrook, and Cohasset) who will be awarded a \$100 scholarship to be applied to the tuition of the first semester of the sophomore year.

**Springfield Druggists'  
Association Scholarship Pharmacy**

A scholarship of \$100 is offered by the Springfield Druggists' Association. This is to be awarded to a sophomore or junior who maintains the highest average in the Department of Pharmacy, and who is worthy and in need of financial assistance. The Springfield Druggists' Association Scholarship Fund was established in 1956.

**The Stop & Shop Companies, Inc.,  
Student Loan Fund** All Colleges

Established in 1974 by The Stop & Shop Companies, Inc., this Student Loan Fund is a combination endowment and revolving fund to be funded by \$100,000. This generous gift recognizes the contribution, in human terms, made through the years by Northeastern to Stop & Shop, which at the time the Loan Fund was established, counted more than 120 Northeastern men and women in its executive ranks, seven of them vice presidents.

The Loan Fund will assist students who have a substantial investment in their education, but are in need of some financial stimulus to aid them in completing their work.

**Student Loan Fund—  
Health Professions** Boston-Bouvé,  
Nursing and Pharmacy and  
Allied Health Professions

In 1974, a foundation established a perpetual loan fund at Northeastern University to benefit full-time students enrolled as middlers, juniors, and seniors in Boston-Bouvé College, the College of Nursing, and the College of Pharmacy and Allied Health Professions. This Loan Fund will aid those students who have a substantial investment in and commitment to the health professions and who require some financial help to complete their preparation.

**The Dr. Ruth E. Sullivan  
Memorial Scholarship Fund**  
Liberal Arts

This fund was established at Northeastern University in 1976 through the generosity of family, friends, and colleagues of Dr. Sullivan who was a member of the Department of English from 1968 until her death in 1976. One or more scholarships are awarded annually to undergraduate or graduate students who demonstrate academic achievement and excellence in interdisciplinary studies in liberal arts such as literature and psychology, the field to which Dr. Sullivan contributed so significantly.

**Ruth Page Sweet  
Scholarship Fund** Boston-Bouvé

This fund was established in 1959 by members of the Class of 1919 and alumnae of the Bouvé-Boston School in honor of their classmate, Miss Ruth Page Sweet, dean of women in the school from 1929 to 1946, administrative director from 1946 to 1948, and director from 1948 to 1958. The scholarship is presented to a junior or senior who has demonstrated a high level of professional promise by his or her academic record and extracurricular activities.

**A. Gilbert Tenney  
Scholarship Fund** Engineering

This fund is in memory of A. Gilbert Tenney, who served as a captain in the Air Force during the Korean War and was killed while in active service. The income from the fund will be awarded to a needy student or students in the field of electrical engineering, studying under the Cooperative Plan of Education.

**The Earl H. Thomson  
Memorial Scholarship**  
All Colleges

This fund was established in 1971 to honor the memory of Earl H. Thomson, a distinguished alumnus of the Class of 1925. Mr. Thomson became an internationally known trademark attorney as senior partner in the firm of Thomson and Thomson. A member of the Northeastern Corporation since 1958 and a Trustee of the University since 1960, he also was a Director of The National Council, former President of the Northeastern Alumni Association and a member of the Board of Directors of Nu Epsilon Zeta fraternity.

The scholarship is awarded annually to one or more deserving and needy students enrolled as freshmen and/or upperclassmen who demonstrate a desire to fulfill the limits of their ability in academic and cooperative periods of study. The scholarship is open ended so that additional sums can be added to it in future years and will be administered and awarded by the University without restrictions as to race, creed, geographic origin, or scholastic attainment. It would be Mr. Thomson's desire that scholarship recipients assume a moral obligation to reimburse this or other scholarship funds as they may be able, in order to make additional financial aid available for other students in later years.

**The Eliot F. Tozer Memorial  
Scholarship** Business  
Administration and Engineering

This fund was established in 1972 through the generosity of the members of the Class of 1931 in memory of their faculty adviser, Eliot F. Tozer. The scholarship is awarded annually to students of proven need in the middle, junior or senior classes of the day Colleges of Engineering or Business Administration. The scholarship is open-ended so that additional sums can be added to it in future years. It will be administered and awarded by the University without restrictions as to race, creed, geographic origin, or scholastic attainment.

**Charles Irwin Travelli  
Scholarships** All Colleges

Numerous scholarships have been given yearly since 1950 to students demonstrating financial need, high academic achievement, and an active interest in University life as shown by participation in one or more major activities. Students are named as recipients of Travelli Scholarships at the completion of their sophomore year. Under normal circumstances, these awards will continue through the senior year.

**Samuel Ulman  
Scholarship Fund** All Colleges

This fund was established in 1960 by Mrs. Samuel Ulman in memory of Samuel Ulman, a student at Northeastern University from 1912 to 1915. The purpose of the fund is to provide scholarship assistance to students in good academic standing who have financial need.

**Uniroyal Foundation Scholarships**  
Engineering, LA, BA

The Uniroyal Foundation has established scholarships to be awarded to students in the Colleges of Engineering, Business Administration, and Liberal Arts who qualify on the basis of leadership and character, academic performance and potential, need for financial assistance, and demonstration of interest in a career in industry.

Recipients assume a moral obligation to repay at least 25 percent of any scholarship received to the University Scholarship Fund after graduation. Students must have completed at least two years of their undergraduate program to be eligible.

**University Scholarships**  
All Colleges

Northeastern University has for many years maintained a scholarship fund for deserving, qualified students. These scholarship are awarded on the basis of need, scholastic standing, and campus citizenship. The recipient of a Northeastern scholarship must be willing to assume a moral obligation to repay the University at some future date.

**Sabestino Volpe  
Scholarship Fund** Engineering

The Sabestino Volpe Scholarship Fund was established in 1972 through the generosity of Mr. Sabestino Volpe, a distinguished alumnus of the College of Engineering and a member of the Class of 1928. The income from the fund is awarded annually as a scholarship to an upper-class student enrolled in the Civil Engineering degree day program within the College of Engineering. Recipients must demonstrate financial need, academic stability and soundness of character.

**Henry E. Warren Scholarships**  
All Colleges

Established in 1958 by the Warren Benevolent Fund, Inc. The purpose of these scholarships is to encourage students to gain cooperative work experience reinforcing study in their major field.

Scholarship awards in the total amount of \$1,000 are awarded annually without restrictions as to race, creed, or national origin, to upper-class students in fields in which related cooperative work positions are few or poorly paid. The recipients of the scholarship must have demonstrated good scholastic standing, fine character, and financial need.

**The Jacob Wasserman  
Scholarship Fund** Pharmacy

Established in 1966 by his friends in memory of Jacob Wasserman, this fund is to provide scholarship aid to a senior student in the College of Pharmacy and Allied Health Professions. The award will be made annually on the basis of financial need, academic performance, and personal qualities.

## Honor Societies and Academic Awards

### HONORS AND AWARDS

The University encourages the achievement of excellence in scholarship by making monetary awards and chartering honor societies in the various academic disciplines.

#### *Honor Societies*

The following honorary societies are chartered in the Colleges:

The Academy—in the College of Liberal Arts

Alpha Kappa Delta—in the College of Liberal Arts, Sociology Department

Alpha Pi Mu—in the College of Engineering, Department of Industrial Engineering

Beta Alpha Psi—in the College of Business Administration, Accounting Concentration

Beta Gamma Sigma—in the College of Business Administration (Massachusetts Delta Chapter)

Boston-Bouvé Honor Society—in the College, all Departments

Chi Epsilon—in the College of Engineering, Department of Civil Engineering

Delta Phi Alpha—national German honor society

Eta Kappa Nu—in the College of Engineering, Department of Electrical Engineering (Gamma Beta Chapter)

Kappa Delta Pi—in the College of Education

Omega Chi Epsilon—in the College of Engineering, Department of Chemical Engineering

Phi Alpha Theta—in the College of Liberal Arts, Department of History (Northeastern Zeta Tau Chapter)

Phi Kappa Phi—national interdisciplinary honor society

Phi Sigma—in the College of Liberal Arts, Department of Biology

Phi Sigma Iota—in the College of Liberal Arts, Romance Languages (Iota Zeta chapter)

Pi Sigma Alpha—in the College of Liberal Arts, Department of Political Science (Northeastern Delta Gamma Chapter)

Pi Tau Sigma—in the College of Engineering, Department of Mechanical Engineering (Northeastern Tau chapter)

Rho Chi Society—in the College of Pharmacy and Allied Health Professions (Beta Tau Chapter)

Sigma Theta—in the College of Nursing

Sigma Xi—Scientific Research Society of North America

Tau Alpha Pi—in Lincoln College (national engineering technology honor society)

Tau Beta Pi—in the College of Engineering (Massachusetts Epsilon Chapter)

Election to the college honorary societies is based primarily upon scholarship, but, before a man or woman is privileged to wear the honorary society insignia, there must be evidence of an integrity of character and an interest in the extracurricular life of the University.



The societies have memberships consisting of the outstanding men and women in the Colleges. Election to an honorary society is the highest honor that can be conferred upon an undergraduate.

### *Awards for Upperclassmen*

University awards are determined by scholastic and citizenship achievement. They are presented by appropriate committees headed by the Dean of Students.

#### **The Academy Award** Liberal Arts

The Academy, the honor society of the College of Liberal Arts, offers annually an award of \$100 to the sophomore in the College of Liberal Arts who, during the previous year as a freshman, made the highest scholastic record.

#### **William Jefferson Alcott, Jr., Award**

This award of \$200 was established in 1934 by members of the faculty and other friends to perpetuate the memory of William Jefferson Alcott, Jr., a brilliant member of the Northeastern Department of Mathematics from 1924 until his death in 1933. The award to a senior is made annually from the income of the fund "for outstanding performance, either in the way of unusual excellence in routine work, or in connection with some intellectual activity outside or beyond the requirements of the curriculum."

#### **Alumni Awards for Professional Promise** All Colleges

Established in 1947 by the Alumni Association, these awards are presented annually at a final senior class meeting in the spring of the year. The awards are made to the outstanding seniors in each of the Basic Colleges who have demonstrated unusual professional promise through their character traits, scholastic achievement, and cooperative work performance.

#### **Beta Alpha Psi**

"The purposes of this fraternity shall be: To instill in its members desire for self-improvement; to foster high moral and ethical standards in its members; to encourage and give recognition to scholastic and professional excellence; to cultivate a sense of responsibility and service in its members; to promote the collegiate study of accountancy; and to provide opportunities for association among its members and practicing accountants."

#### **The Beta Gamma Sigma Society Award** Business Administration

"The purpose of this society shall be to encourage and reward scholarship and accomplishment among students of business administration, to promote the advancement of education in the art and science of business, and to foster integrity in the conduct of business operations."

Election to membership in Beta Gamma Sigma is the highest scholastic honor that a student in business administration can win.

The Massachusetts Delta Chapter of Beta Gamma Sigma, the national honorary society of colleges of business administration, offers an annual scholarship of \$100 to the sophomore in the College of Business Administration who, during the previous year as a freshman, made the highest scholastic record.

#### **Boston-Bouvé Honor Society Awards** Boston-Bouvé

The society offers an annual award of \$100 to the sophomore in Boston-Bouvé College who, during the previous year as a freshman in the College, made the highest scholastic record. Each student voted into the Society receives an engraved certificate at a special Honors Assembly.

#### **Cooperative Education Awards** All Colleges

These awards are presented to seniors in each of the Basic Colleges in recognition of outstanding performance in the Cooperative Education Program, through which they have personified the objectives and ideals of the University. The awards are presented at the Annual Awards Luncheon.

#### **Sears B. Condit Honor Awards** All Colleges

These awards were established in 1940 through the generosity of Sears B. Condit. At Honors Day Convocation, Sears B. Condit Honor Awards are awarded annually to outstanding students in the senior class. Each award carries a stipend as well as a certificate of achievement.

**Director's Award**

The Director's Award of \$100 is made annually by the Director of the African-American Institute to the individual judged by the Director to be the most outstanding black senior. The award is based on involvement in African-American Institute programs and scholarship, as well as interaction with the community at large. The award is presented at the Awards and Unity Banquet in June.

**Alfred J. Ferretti Award**  
Engineering

Tau Kappa Chapter of Pi Tau Sigma, the Mechanical Engineering National Honor Fraternity, sponsors an annual award to the sophomore mechanical engineering student at Northeastern having the highest scholastic standing. The award is named in honor of Professor Ferretti, who retired June 30, 1961, after 43 years of service to the University.

**Clara and Joseph F. Ford**  
Awards All Colleges

The Ford Awards are made to students who have shown a democratic and tolerant spirit and who are well disposed toward people of all creeds and races. They are chosen from the senior class, and judged on the basis of their contributions through participation or leadership and their extra-curricular organizations. Students must have demonstrated by their actions that they are particularly tolerant and willing to work with and for other people.

**The Gamma Phi Kappa Fraternity**  
Award Fund All Colleges

The Gamma Phi Kappa Fraternity Award Fund, established in 1972 by the Brotherhood and Alumni of Gamma Phi Kappa Fraternity, is awarded to an entering freshman or undergraduate student in any of the Basic College Day Programs at Northeastern University. Preference will be given to students based upon demonstrable financial need. Brothers of Gamma Phi Kappa Fraternity are not eligible for this award.

**The Harold D. Hodgkinson**  
Achievement Awards All Colleges

Established in 1954, the Harold D. Hodgkinson Achievement Awards of \$500 each are granted annually to a senior student in Division A and Division B. The winners of the awards are known as the Hodgkinson Scholars for the year in which they are chosen.

The award is based primarily upon distinguished scholastic achievement with due consideration of character, personality, qualities of leadership, co-operative work experience, military record (if any), and service in voluntary organizations and activities. Student leadership accomplishments and professional potential are evaluated in connection with these criteria.

The Hodgkinson Scholar is chosen by a committee of administrative members of the faculty. An appropriate certificate is presented to each recipient as a permanent record of his selection.

**Kappa Delta Pi Award**  
Education

Kappa Delta Pi, the College of Education honor society, offers an annual award of \$100 to the education sophomore who, during the freshman year, achieved the highest scholastic record.

**The Lilly Achievement Award**  
Pharmacy

The Lilly Achievement Award is given to a graduating senior for superior scholastic and professional achievement. Leadership qualities, professional attitudes, and academic performance will be considered in the selection of the individual for this award.

**Julia and Merrill Robert**  
Lovinger Award All Colleges

This annual \$100 award was established in 1960 by William Lovinger for the purpose of giving assistance to a student of acceptable scholastic standing who can demonstrate financial need.

**Robert Lubets Award**  
Business Administration

The award was established in 1953 by the Boston accounting firm of Robert Lubets & Company to recognize outstanding professional development and personal growth by students training for careers in accounting. Two hundred dollars will be awarded to that degree candidate who, at the completion of his junior year, has demonstrated the greatest personal growth and professional development as evidenced by his improvement in scholastic achievement accompanied by professional aptitude indicative of future success as an accountant.

**McKesson & Robbins, Inc.,  
Scholarship Pharmacy**

This scholarship of \$200, given annually by McKesson & Robbins, Inc., is awarded to a worthy student in financial need.

**Ruth E. Phalen Memorial  
Award Fund All Colleges**

This fund was established in 1959 by Thomas E. Phalen Jr., a member of the faculty, in memory of his wife. The income from this fund is used yearly as a cash award to a senior, junior, or middler, preferably in the College of Engineering, who maintains at least a 2.0 academic average, shows outstanding ability in one or more varsity sports, and demonstrates excellent campus citizenship.

**The Phi Sigma Society Award  
Liberal Arts**

Phi Sigma, honor society in the Department of Biology, offers an annual award of \$50 to the junior or senior majoring in biology or a related science who demonstrates the greatest research potential. To qualify for the award, the student must be a member of Phi Sigma.

**Roland Guyer Porter  
Memorial Fund  
Electrical Engineering**

This fund was established in 1953 by colleagues and friends of the late Professor Roland G. Porter, for many years head of the Department of Electrical Engineering. Interest from the fund provides an annual award to a student in the Department of Electrical Engineering who best exemplifies the qualities of mind and character which Professor Porter did so much to develop in his lifetime.

**President's Awards  
All Colleges**

At the annual Honors Day Convocation, six awards of \$200 each, known as the President's Awards, are presented to the students with outstanding records in both divisions of the sophomore, middler, and junior classes.

**The William Rand Award  
Engineering**

The Massachusetts Epsilon Chapter of Tau Beta Pi annually offers an award of \$50 to the outstanding middler in the College of Engineering. The award is based upon outstanding scholarship, breadth of interest, and contribution to the University. All middlers with a 3.5 average or above are eligible; and the winner is chosen after careful screening and interviews with members of the chapter.

**ROTC Awards  
ROTC**

Awards totaling \$1,000 are available to ROTC cadets each year. The University offers ten \$50 awards annually—four to sophomores, four to middlers, and two to juniors.

Scabbard and Blade (the cadet officers' honorary society) offers one award annually to middlers. The Pershing Rifles (the basic course honorary society) offers a \$50 award to a sophomore Pershing Rifles cadet.

Academic Achievement Awards are won by each cadet in the top 10 percent of ROTC classes. This award, a wreath, is worn above the right breast pocket of the uniform during the year immediately following. Leadership Achievement Awards, consisting of letters of commendation, are awarded to each cadet in the top 10 percent in leadership potential.

Many medals and trophies are also awarded by other organizations to ROTC cadets for achievements in diverse fields.

**Nguzo Saba Award**

Two Nguzo Saba Awards are presented each year by the African-American Institute to the black male and female who have proved themselves of invaluable service to the black community of Northeastern University and Boston. The award is in the amount of \$100 and is presented at the Awards and Unity Banquet.

**Sigma Theta  
Nursing**

Sigma Theta, the honor society in the College of Nursing, annually offers an award of \$100 to the sophomore in the College of Nursing who, during the previous year as a freshman, made the highest scholastic record.

**Max Starr Award**

Business Administration

The Max Starr Award in Public Accounting was established in 1968 by the Max Starr Foundation to recognize every other year an outstanding member of the junior class in the College of Business Administration preparing for a career in Public Accounting. The recipient is chosen on the basis of both academic and cooperative work records as well as personal qualities. The student receives awards of \$250 in the both the junior and senior years.

**Tau Beta Pi Award**

Engineering

Massachusetts Epsilon Chapter of Tau Beta Pi Association, national honorary society in engineering, annually offers a scholarship of \$100 to the sophomore in the College of Engineering who, during the previous year as a freshman, made the highest scholastic record.



# Housing

## RESIDENCE HALLS

Northeastern University's location in one of the most central and exciting sections of Boston plays an important part in your education. With residence halls on the Back Bay campus, between the Museum of Fine Arts and Symphony Hall, the city is at your doorstep. Northeastern's library, student center, and athletic facilities are nearby.

Most of the residence halls have lounge areas and recreation rooms, including color television. Privacy and a quiet study environment are encouraged, but students must recognize that residence hall living cannot provide the privacy and quiet they may enjoy in their own homes.

Each hall is staffed with a Housing Administrator and students who serve as Residence Assistants. A natural advantage to resident living is increased involvement in social and educational activities. The benefits, as well as the occasional inconveniences of living in a community, contribute to personal growth. Students are encouraged to join the committees that make decisions about student life.

### Housing Contracts

Students requesting University housing on their application for admission will receive two housing contracts with their certificate of acceptance, one for their files, and one to be returned with the deposit to the Office of the Bursar, 245 Richards Hall. The required deposit for new students is \$100; for upperclass students returning to the halls, the fee is \$50. The deposit for University apartments is \$100. Room assignments are mailed approximately three weeks prior to registration.

A housing contract for freshmen is for three full quarters of the year. Upperclass transfer students must file more often since their contract is for one quarter at a time. Contracts for summer quarter freshmen are handled on an individual basis in accordance with the student's academic schedule.

### Married Students

No University housing is available for married students. However, the University does maintain a file of off-campus apartment listings. This information is available at the Dean of Students' Office for Housing Affairs, 104-106 EL.



### **The Selection**

The choice of housing is an important consideration for the first year, and freshmen are encouraged to visit Northeastern before making a decision. Although it is optional, the University recommends that students not living at home reside in University housing. Tours of residence halls are available by advance arrangement with the Department of Admissions.

Upperclass and transfer students may live in either residence halls or apartments. Men's residence halls are designed to house from two to six students in one area. Some of the larger rooms house three men while "group areas" have a total of six men in two or three rooms. Most women's rooms are for one or two students except in co-ed facilities where triple rooms are available.

The University maintains many apartment units for upperclass men and women which accommodate up to four students. Selection depends upon availability, as well as the date of receipt of housing contract and deposit which determine the order in which housing is assigned. Each unit is fully furnished and the rental charge includes utilities.

Arrangements for off-campus housing are the responsibility of the student and the student's family. Those within commuting distance should be sure of housing for the year before signing a contract.

### **Fraternity Housing**

Certain fraternities provide opportunities for room and board for men at reasonable rates. Information regarding these housing facilities may be obtained from the Dean of Students Office for Housing Affairs, 104-106EL, Northeastern University, Boston, Mass., 02115.

### **Cars**

**Freshmen living in residence halls are not allowed to have cars or other powered vehicles on campus.**

Upperclass students are strongly discouraged from bringing cars with them, as the University does not permit overnight parking and there is a severe shortage of public spaces near the University.

**Costs for Room and Board  
per Quarter**

<i>Women's Residence Halls</i>	
Stetson Hall, West	\$700.00
Stetson Hall, East	\$700.00
Kerr Hall	\$650.00
<i>Co-ed Residence Halls</i>	
Smith (upperclass students only)	\$650.00
Speare	\$700.00
White	\$650.00
<i>Men's Residence Halls</i>	
Melvin Hall	\$650.00
Light Hall	\$650.00
115 Hemenway	\$600.00
119 Hemenway	\$600.00
153 Hemenway	\$600.00
157-163 Hemenway	\$710.00
40 Evans Way	\$625.00
<i>Apartments (food plan not included)</i>	
106-122 St. Stephen Street	\$380.00
Coleman-Huntington Avenue	\$380.00
Mark-St. Stephen Street	\$380.00
454 Huntington Avenue	\$380.00
464 Huntington Avenue	\$400.00
<i>Meals Only</i>	\$325.00

The above figures do not include meal tax which will be added to food costs. **All rates are subject to change.**

**Security**

Security for the residence hall areas is provided by professionally trained University police officers and entrance proctoring system. Residents are required to show appropriate identification to the security proctor when entering the residence hall. Guests, both male and female, must sign in with the proctor.

The University Police provide escort service for students who wish to go from one section of the campus to another late at night.

**University Food Service**

The University food plan provides for 21 meals per week, and all students who live in University residence halls are required to participate. When conditions warrant, such as during weekends and slow periods, the University may close or consolidate certain dining facilities.

## Student Activities



Northeastern University regards student activities as an integral part of education. The purpose of the program is to provide students with a variety of opportunities for experience, training, recreation, and the pursuit of spare-time interests. By participating, students not only add to their personal development and build up assets which may be as important on graduation as their academic record, they also contribute to the life of the University.

At present, on Mondays and Thursdays of each week two hours are set aside for student activities. No classes are scheduled. Instead, students attend their choice of the more than 130 separate clubs, organizations, and interest groups that meet during these periods. As a further indication of the importance the University puts on activities, the advisory system has been extended to the program. Thus, an adviser of an organization maintains continuity and liaison between divisions and establishes an essential reference position for all students. The role played by the adviser often has considerable bearing on the success or failure of an organization and on important public relations and attitudes.

Since its opening in the Fall of 1965, the Carl S. Eli Student Center has become the students' favorite meeting place on campus. Open seven days a week, the Student Center provides lounges, meeting rooms, a patio area for socializing, study areas, recreational facilities, and a cafeteria for the full use of the student body. Although many of the rooms are designed to serve multiple purposes, the following facilities are included: the little theatre and drama rehearsal room; the *Rathskeller* (the Student Pub); music practice and rehearsal rooms; exhibition areas; student organization offices; publication areas and a student radio station; meeting rooms, a typing room, and space for a variety of recreational facilities including pocket billiards, ping pong, chess and checkers. Complementing these activities is a full array of concerts, distinguished speakers, movies, plays, and dances.



## **Special Interest Groups**

### **All University Activities**

Radio Station WRBB-FM  
Social Council  
Student Center Committee  
Student Federation  
Student Union

### **Artistic Organizations**

Creative Council on Black Art  
Dance Theatre  
Silver Masque

### **Educational Organizations**

Arabic Club  
Biology Club  
Black Engineering Students Society  
Computer Club  
Geology Club  
Health Careers Club  
Hellenic Club  
International Students' Forum  
Islamic Society  
Israel Forum  
Medical Laboratory Science Club  
Medical Records Student Association  
Physics Club  
Recreation Education Club  
Student American Pharmaceutical Association  
Students International Meditation Society  
Tactical Society  
Together Phi Together  
Young Black Businessmen's Association

### **Musical Organizations**

Early Music Players  
Ethnomusicological Society  
N.U. Band  
N.U. Chorus  
N.U. Orchestra

### **Political and Social Action Organizations**

Chinese Students' Club  
Ecology Coalition  
Gay Student Organization  
Young Socialist Alliance

### **Publications**

*Cauldron*  
*Northeastern News*  
*Spectrum*  
*The Onyx*

### **Recreational Organizations**

African-American Photo Society  
 C.A.R. Club (College Auto Racing)  
 Chess Club  
 Evening Ski Club  
 Evening Student Council  
 Fencing Club  
 Flying Club  
 Gymnastics Club  
 Hus-Skiers and Outing Club  
 Jazz Dance Club  
 Judo Club  
 Karate Club  
 Kung Fu Club  
 Model Railroad Club  
 Modern Dance Club  
 Men's Volleyball Club  
 Photography Club  
 Radio Club  
 Rifle Team  
 Scabbard and Blade  
 Soccer Club  
 Sport Parchute Club  
 Sports Car Club  
 Underwater Society  
 Table Tennis Club  
 Yacht Club

### **Religious Organizations**

Bahai Association  
 Campus Crusade for Christ  
 NU Christian Fellowship  
 The Christian Science Organization  
 Hillel



### Fraternities

The twelve recognized fraternities (seven local and five national) play an important role in the extracurricular life of the University. The frats and their addresses follow:

Alpha Epsilon Pi  
1288 Commonwealth Ave.  
(Apt. #6)  
Boston, Ma 02135  
734-1345

Alpha Kappa Sigma  
29 Greenough Ave.  
Jamaica Pl, Ma 02130  
524-9869

Beta Gamma Epsilon  
234 Commonwealth Ave.  
Boston, Ma 02116  
247-8736

Delta Chi  
12 Wadsworth St.  
Allston, Ma 02134  
787-5246

Gamma Phi Kappa  
11 Vancouver St.  
Boston, Ma 02115  
427-8774

Iota Phi Theta  
360 Huntington Ave.  
(255 EC)  
Boston, Ma 02115  
437-2632

Nu Epsilon Zeta  
255 St. Paul St.  
Brookline, Ma 02146  
566-9338

Phi Beta Alpha  
6 Cerina Rd.  
Jamaica Pl, Ma 02130  
524-9668

Phi Gamma Pi  
241 Kent St.  
Brookline, Ma 02146  
566-8970

Phi Sigma Kappa  
37 Greenough Ave.  
Jamaica Pl, Ma 02130  
524-9893

Tau Kappa Epsilon  
15 Wadsworth St.  
Allston, Ma 02134  
254-9680

Zeta Beta Tau  
42 Chestnut Square  
Jamaica Pl, Ma 02130  
522-5162

### Sororities

The four recognized sororities (one local and three national) also play an important role in the extracurricular life of the University. Although none have separate houses, they can all be reached through the Office of Student Activities, room 255 EC, telephone 437-2642, at the University. The four sororities are:

Alpha Kappa Alpha  
Alpha Sigma Tau  
Delta Phi Epsilon  
Omega Sigma

### Intramural Sports

The intramural sports programs for men and women are organized to permit students to participate as members of a sports club, as members of a team, or as individuals on a nonteam, "drop-in-and-participate" basis. Sports activities are scheduled according to seasonal interests, and include aquatics, badminton, basketball, boxing, gymnastics, handball, jogging, judo, track, volleyball, and weight and training.

### Professional Societies

Students will benefit in many ways by joining the student chapter of a professional society in an area of study of particular interest to them. They will keep up with latest developments by listening to authorities in that field, they will have an opportunity to exchange ideas with students from other colleges and universities as well as from North-eastern; and they learn more about professional standards.

If students take an active part by attending regular meetings and social affairs, they may become officers or members of a delegation to meetings outside the University. Such participation may prove invaluable in shaping a career.

The following professional societies are open to upperclassmen in their respective professional fields. The majority are national organizations:

Accounting Society (local)  
 Alpha Zeta Omega (pharmacy)  
 American Chemical Society  
 American Finance Association  
 American Institute of Chemical Engineers  
 American Institute of Industrial Engineers  
 American Marketing Association  
 American Pharmaceutical Association  
 American Society of Civil Engineers  
 American Society of Mechanical Engineers  
 Council of Professional Engineering Societies  
 Institute of Electrical and Electronic Engineers  
 National Education Association  
 Phi Chi Theta (business administration sorority)  
 Sigma Delta Chi (journalism)  
 Society of American Military Engineers  
 Society of Women Engineers





## PHOTO- IDENTIFICATION OPERATION

All full-time students, staff and faculty are required to have an officially approved and properly validated photo-identification card. All students are required to show their card at the Library, Athletic Events, Student Elections, Health Services, Bursar's or Registrar's Office.

An official I.D. card will be issued to new students at their initial orientation and registration periods. Replacements for lost cards can be obtained by going FIRST to the Bursar's Office, 248 RI, and then 255 EC, between the hours 11:30a.m.-2:30p.m., Monday through Friday, for the photo.

## RELIGIOUS LIFE

Interfaith Chapel services are held in the Bacon Memorial Chapel, located in the Ell Student Center. These voluntary religious services are planned to commemorate special days and events, and will be announced sufficiently ahead of time. The Chapel is also used for denominational worship services and special lectures on religion. It is open daily for prayer and meditation, and is a frequent setting for weddings of students and alumni. The denominational chaplains are available in nearby Chaplains' Rooms.

The Northeastern Interfaith Chaplain's Association, along with the Advisory Committee on University Religious Life, has genuine concern for the religious and moral development of students of all faiths. Although the religious life at Northeastern emphasizes the interfaith and ecumenical spirit, denominational student organizations are given full support on campus. These organizations are officially recognized by the Student Affairs Committee and are listed in the section entitled, "Student Interest Groups." Most of these groups have their chaplains, their officially appointed faculty advisers, and student officers.

## THE DEPARTMENT OF ATHLETICS

All students are urged to participate in the University's athletic program, which includes all major collegiate sports. The University maintains varsity and subvarsity teams in baseball, crew, cross-country, track, football, hockey, skiing, basketball, and golf. These teams are among the finest in the East and have represented the University in both national and international competition. Students may also participate in such sports as riflery, sailing, swimming and water polo.

Facilities include the spacious Cabot Physical Education Center and Edward S. Parsons Field. The gymnasium contains four basketball courts and one gymnastics court, a rifle range and a cage which provides facilities for indoor track as well as baseball and football drills. Parsons Field houses the Huskies' football stadium with its new artificial turf and the Northeastern baseball diamond. It also accommodates training areas for the outdoor track team. The Northeastern crew enjoys a spacious white boat house on the Charles River and also works out in the Cabot complex, where rowing tanks are located.

Success has been a tradition at Northeastern. Of the major teams competing over the last 10 years, 68 have had victorious seasons while only 16 have ended in the red column.

Northeastern annually fields one of the toughest football teams in New England. In the last 10 years, they have enjoyed six winning seasons while competing against such Eastern powers as Temple, Harvard, and Holy Cross. The finest team in the recent past was 1963's undefeated squad which went on to play in the Eastern Bowl.

The University's hockey team is traditionally one of the most powerful in the East. It won the Eastern Collegiate Athletic Conference Holiday Hockey Tournament in 1964 and it has competed in several E.C.A.C. championships. It is annually ranked in the top 10 in the East.

Basketball teams at Northeastern also have a winning tradition. The Huskies won the N.C.A.A. Regional Championship in 1962 and 1963 and went on to compete in the national small-college championships in Evansville, Indiana. Also, in 1963, Northeastern received the E.C.A.C. College Division Trophy for the finest small-college team in the East. After competing in six N.C.A.A. College Division Championships in seven years, the Huskies moved into the University Division and now play national powerhouses like Pennsylvania and Syracuse. After ten years they have yet to have a losing season.

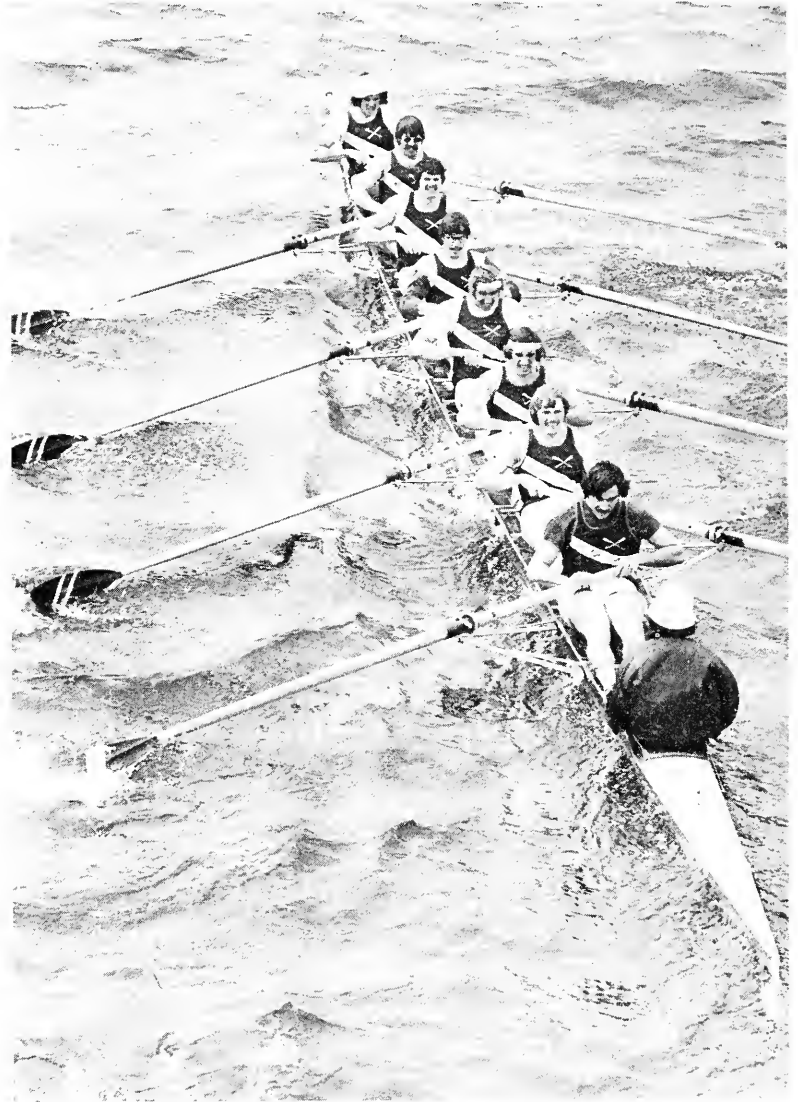
The cross-country, indoor, and outdoor track teams have been outstanding over the past decade. All three squads have never suffered a losing season. The cross-country team has been 76-21 over the past 10 years, the indoor team 81-10, and the outdoor team 57-8. Last year they won the New England Indoor Track title and the Greater Boston Cross-Country Championships.

Northeastern baseball also ranks with the best in the East. The Huskies were the New England Champions in 1966 and went on to compete in the College World Series. They also participated in the New England playoffs in 1964, 1972, and 1973. Coach John Connelly has posted winning seasons in seven of the last 10 seasons and was New England Coach of the Year in 1964.

Northeastern instituted skiing as a varsity sport in 1970. The team competes in the prestigious Osborne Division of the New England Intercollegiate Skiing Conference and, under coach Ed Elliott, has yet to post a losing season.

The most amazing Husky sport story is that of the Northeastern crew. In 1965, their first season, they won four out of five regattas, the small college rowing championships, and became the first N.U. team to participate in international competition when they rowed in the Henley Royal Regatta. The next year, the Huskies moved into the major college rowing league. They culminated their swift rise when coach Ernie Arlett's eight won the Eastern Sprints in 1972 and 1973 and rowed in the finals of the Grande Challenge Cup of the Henley Royal Regatta. In 1973, they were considered the finest eight in the nation.

For a description of women's sports, as well as information concerning intramural programs, please turn to the section on Boston-Bouv  College, pages 35 to 47.



## FOREIGN STUDENT INFORMATION



The University welcomes qualified students from foreign lands who are adequately prepared to benefit from the educational, cultural, and social opportunities it has to offer. Eighty countries are currently represented within our student body.

Northeastern University is authorized under federal law to enroll nonimmigrant aliens as full-time students in degree-granting programs of its basic undergraduate colleges and graduate schools. Part-time and special students are not included in this authorization.

Because of problems of adjustment experienced by many students from foreign countries, the University makes a special effort to carefully evaluate the educational and financial qualifications of prospective students. The University has a Foreign Student Adviser and staff to administer the special needs of these students.

Students who are seeking to study English as a second language in an intensive program may enroll for the noncredit course at the English Language Center. Foreign students who need to have their English skills evaluated, and those who wish to improve their English for specific purposes, may obtain special assistance through this office. There are also English language courses for foreign students offered for credit at the freshman level.

University admissions policies for foreign students are outlined in "A Guide for Students from Other Countries," available from the Department of Admissions or the office of the Foreign Student Adviser.

The University does not award financial aid to foreign students.

## FRESHMAN ORIENTATION PROGRAMS

Except for the visits which we hope students will make to the Admissions Office, the first opportunity to learn about Northeastern and to meet classmates, deans, and advisers will come during the freshman orientation period.

The program for orientation is planned and supervised by the Dean of Students and his staff who will see to it that students are introduced to the customs and people that make up Northeastern. At that time, registration, class schedules, and other procedures and details necessary for enrollment will be completed.

During the orientation period, in accordance with a long-standing tradition, students will be welcomed by the President at special convocations. Later, they will be able to meet with deans and others who will have important roles in their college careers.

Upperclass students generously volunteer their time to assist in setting up and running programs, primarily evening events, which provide opportunities for relaxation, recreation, and cultural enrichment. The Office of the Dean of Students is available during the orientation period and throughout the year to answer questions and provide assistance. The Freshman Affairs unit of that office has special responsibility for monitoring the academic progress of all freshmen and for assisting them in a variety of ways to attain sophomore status.



# PART IV



# GENERAL INFORMATION

## GENERAL INFORMATION

### History

Founded in 1898, Northeastern University is incorporated as a privately endowed nonsectarian institution of higher learning under the General Laws of Massachusetts. By special enactment, the State Legislature has given the University general degree-granting powers. The University is governed by a Board of Trustees who are elected by and from the Northeastern University Corporation, which is composed of 174 distinguished business and professional men and women.

From its beginning, Northeastern University's dominant purpose has been the discovery of community educational needs and distinctive and serviceable ways of meeting them. The University has not duplicated the programs of other institutions, but has sought to pioneer new areas of educational service.

A distinctive feature of Northeastern University is its Cooperative Plan, initiated by the College of Engineering in 1909 and subsequently adopted by the Colleges of Business Administration (1922), Liberal Arts (1935), Education (1953), Pharmacy (1962), Nursing (1964), Boston-Bouv   College (1964), the College of Criminal Justice (1967), and by Lincoln College's daytime Bachelor of Engineering Technology Program (1971). This educational method enables students to gain valuable practical experience as an integral part of their college programs and also provides the means by which they may contribute substantially to the financing of their education. The Plan has been extended to the graduate level in engineering, actuarial science, rehabilitation administration, professional accounting, business administration, and law.

In the field of adult education, the University offers graduate and undergraduate degree programs and non-credit programs which are specifically designed to meet the needs and interests of adults who wish to further their education on a part-time basis.

All formal courses of study leading to degrees in the Graduate Division, Lincoln College, and University College are approved by the undergraduate faculties concerned, and are governed by the same qualitative and quantitative standards as the regular day curricula. Courses are scheduled in the day and evening at the Boston Campus, Suburban Campus in Burlington, and at other off-campus locations near Boston.



## General Information

### Policy on Changes of Program

The University reserves the right to withdraw, modify, augment or change the order or content of courses in any curriculum.

It further reserves the right to change the requirements for graduation, tuition, and fees charged, and other regulations. However, no change in tuition and fees at any time shall become effective until the school year following that in which it is announced.

Any changes which may be made from time to time pursuant to the above policy shall be applicable to all students in the school, college, or department concerned, including former students who may re-enroll.

### Textbooks and Supplies

The Northeastern University Bookstore, located on the ground floor of the Eli Student Center, is a department of the University and is operated for the convenience of the student body. All books and supplies which are required by the students for their work in the University may be purchased at the Bookstore.

### The Academic Year

Northeastern University operates on a quarter system calendar.

### Quarter Hour Credits

All courses are evaluated in terms of quarter-hour credit. A quarter-hour credit is equal to three-fourths of a semester-hour credit.

### Grades and Examinations

Examinations covering the work of the quarter are usually held at the close of each quarter. Exceptions may be made in certain courses where, in the opinion of the instructor, and with the approval of the Dean of the College concerned, final examinations are not necessary.

### Pass-Fail System

Students may register for a limited number of courses on a pass-fail basis. Each college has its own rules governing this system. Common to all colleges, however, is the grading system. Pass-fail grades are not included in the calculation of the quality point average. Only pass grades earn credits toward degree requirements.

### Grades

A student's grade is officially recorded by letter. A listing of grades with their numerical equivalents follows:



- A Outstanding Attainment
- B Good Attainment
- C Satisfactory Attainment
- D Poor Attainment
- F Failure
- I Incomplete
- S Satisfactory achievement in a pass-fail course. Counts toward total degree requirements.
- U Unsatisfactory achievement in a pass-fail course.
- X Incomplete in a pass-fail course.

#### Numerical Equivalents

4.0  
3.0  
2.0  
1.0  
0.0

A general average of D is not acceptable and will not allow a student to continue at Northeastern University.

Freshman students who are taking a full academic program and who have a weighted average for the year below 1.4 will not be permitted to register for advanced work. Upper-class students should consult the Student Handbook to ascertain the level of continuing achievement required of them by the faculty of their college.

An I, or X (Incomplete), grade is used to show that the student has not completed the course requirements.

An official University grade report is mailed to each student at the end of each quarter.

### Transcripts

Applications for transcripts of record are made at the Registrar's Office (120 HA). A charge of \$1.00 is made for each transcript request.

### Dean's List

A Dean's List, issued at the end of each quarter, contains the names of upper-class and freshman students who have a 3.0 weighted average in all subjects with no grade below C during the preceding period. No student who is on any form of probation or who is carrying a schedule below eleven quarter hours is eligible for The Dean's List.

### Reports on Scholastic Standing

Reports for all students are issued at the end of each grading period. Questions about grades are to be discussed with the student's faculty adviser.

At the end of the academic year, juniors will receive, in addition to their term report, a complete cumulative copy of their permanent record. This is so that the junior may be aware of any discrepancies in his record, and if so, may contact the dean of his college.

Students are constantly encouraged to maintain an acceptable quality of college work. Parents and students are always welcomed by the college officers and faculty advisers for conference upon such matters.

### **Family Educational Rights and Privacy Act**

In accordance with the Family Educational Rights and Privacy Act of 1974, Northeastern University permits its students to inspect their records wherever appropriate and to challenge specific parts of them when they feel it necessary to do so. Specific details of the law as it applies to Northeastern are printed in the *Student Handbook* and the *Northeastern NEWS*, and are distributed annually at registrations of University College and the graduate schools.

It is the policy of Northeastern University to deal with the student in all academic and administrative matters. If parents require any information regarding the progress of their son or daughter, they may contact the Dean of Students Office.

### **General Conduct**

It is assumed that students come to the University for a serious purpose and that they will conform to such regulations as may from time to time be made. The University community expects each student to respect the rights and privileges of others and to adhere to acceptable standards of personal conduct. Students should exercise their freedom with maturity and responsibility. They are expected to obey University regulations and follow the instructions of and pay due respect to University officials. Conduct inconsistent with the general order of the University may result in disciplinary action. Damage to any building or to any of the furniture, apparatus, or other property of the University will be charged to the student or students known to be immediately involved.

The University seeks to administer discipline with a high standard of integrity and a scrupulous regard for truth. The attempt of any student to present any work which is not his or her own, or to pass any examination by improper means, is regarded as a most serious offense and renders the offender liable to disciplinary action. The aiding and abetting of a student in any dishonesty is also held to be a grave breach of discipline.

### **Attendance**

Students are expected to attend all meetings of their classes. Absence from regularly scheduled classes may seriously affect the standing of the student and result in dropping the subject or subjects from his or her schedule. Laboratory work can be made up only during hours of regularly scheduled instruction.

### **Emergency Closing of the University**

Students, faculty, and staff are notified by radio when it becomes necessary to cancel classes because of extremely inclement weather. Radio stations WBZ, WEEI, WHDH, WJDA, WCOP, WRKO, WLYN, WKOX, WHAV, and WLLH-AM, and WVBF and WBCN-FM, will announce the University's decision to close.

In addition, the University maintains an emergency snow phone (262-SNOW). Whenever in doubt, call 262-SNOW and a taped message will indicate the status of classes.

# ROTC

## Reserve Officers' Training Corps

### ARMY

#### FACULTY

John W. Peters, LTC, USA;  
M.S., *Professor and Chairman*

#### Assistant Professors

James D. Ryan, MAJ, USA; M.Ed  
Leo X. Dwyer, Jr., CPT, USA; M.B.A.  
Bruce R. Gale, CPT, USA; M.A.  
James W. Rooney, CPT, USA; M.Ed.

#### Instructional Staff

Stanley J. Tomsick, MSG, USA  
Smeltzer, George B., Jr., SFC, USA

#### General Objectives

The Department of Military Science is the instructional department of the University which administers the Army Reserve Officers' Training Corps (ROTC) Program. The Reserve Officers' Training Corps is regarded by Northeastern University as an integral part of its educational program, and is made available on a voluntary basis to all students who are otherwise qualified.

The Reserve Officers' Training Corps of the United States Army exists for the purpose of developing officers—leaders. It offers courses of instruction leading to a commission as a second lieutenant in the United States Army Reserve or the Regular Army. The mission of ROTC is to have ready in time of national emergency a corps of educated, trained military leaders for our nation. Our Northeastern ROTC is an Army, Senior Division, Class CC (Civilian College) unit.

The staff and faculty of the Department of Military Science consist of officers and noncommissioned officers assigned by the Department of the Army and civilians assigned by the University. Officers are individually nominated for assignment to the University and are appointed only after records have been reviewed and each individual has been accepted by the University.

#### Courses of Study

The program of instruction consists of a Basic Course and the Advanced Course. The Basic Course, taken during the freshman and sophomore years, and the Advanced Course, presented during the middler, junior, and senior years, provide instruction common to all branches of the Army. ROTC complements the Co-op Program by tailoring its courses to the student's availability. Graduates of the Advanced Course receive commissions as second lieutenants in the U.S. Army Reserve or Regular Army.

### **Enrollment in the ROTC Basic Course**

Enrollment in the ROTC Basic Course is voluntary and is open to all students of the Basic Colleges who meet minimal acceptance requirements. Students may withdraw from the Basic Course at any time during their freshman or sophomore year. No obligation is incurred by participating in the Basic Course.

### **Eligibility for the Advanced Course**

The Advanced Course is open to all students who are qualified. Students may qualify by any one of the following methods:

1. Successfully complete the Basic Course or its equivalency as approved by the Professor of Military Science.
2. Be an honorably discharged veteran whose service may be substituted for the Basic Course.
3. Successfully complete a summer camp of six weeks following their sophomore year if:
  - a. They are citizens of the United States and will not have reached 28 years of age at the time of commissioning;
  - b. They successfully complete such survey and general screening tests as may be prescribed;
  - c. They have three academic years to complete for graduation (two for full-time students);
  - d. They are selected by the Professor of Military Science and the University.
  - e. They successfully complete a U.S. Army physical examination.

All students accepted for the Advanced Course must execute a written contract with the Government. The current service obligation for newly commissioned second lieutenants is four months to three years depending on the needs of the Army and the desires of the officer.

### **Pay**

All Advanced Course cadets are paid \$100 monthly during actual Advanced Course instruction, up to a total of \$2,000 during the three years. Camp pay is approximately \$400 over and above housing, messing, and medical care, which are free at camp. Transportation to and from camp is also paid.

### **ROTC Scholarships**

The Army ROTC Scholarship Program is designed to offer financial assistance to outstanding young people who are interested in the Army as a career. Each scholarship provides for full tuition, fees, and textbooks in addition to pay of \$100 per month.

ROTC scholarships at Northeastern are for five-, four-, three-, or two-year periods. The five-year period scholarships are offered to entering freshmen. Enrolled ROTC cadets are eligible for the other scholarships.

These awards are not related to financial need, and the earnings of a student during his cooperative work period do not reduce scholarship payments. This award may be supplemented, when necessary, by other scholarships, loans, or part-time jobs.

Applications for entering freshmen must be submitted prior to January 15 for the following school year. Information on the ROTC Scholarship Program may be obtained by writing to the Professor of Military Science, Northeastern University.





### **Veterans**

Honorably discharged veterans (enlisted) may be enrolled in ROTC with one or both years of the Basic Course waived, depending on prior service. They must be co-aligned in ROTC with other members of their class in the University curricula. Veterans are a distinct benefit to the Corps of Cadets because their actual experiences lend color to the program and help to orient cadets without prior service. Certain credits are available to veterans depending upon service. Former commissioned officer veterans are not eligible for ROTC.

### **Transfer Students**

A student transferring to Northeastern University from another institution where he has been enrolled in an ROTC program similar to that at Northeastern is allowed credit for his work. The student's records are obtained from his former professor of military science. Such a transfer student must be co-aligned in ROTC with other students in his class.

Students transferring to Northeastern University as middlers, without previous ROTC training, may enroll in the Advanced Course providing they attend a six-week summer camp prior to the start of the middler year.

Students transferring to Northeastern University as sophomores may also enroll in ROTC as middlers providing they satisfactorily complete a six-week summer camp prior to the start of the middler year. Application should be made to the Department of Military Science no later than March 1.

Transfer students may obtain complete information and assistance from the Department of Military Science.

### **Uniforms and Equipment**

An Army uniform is issued without cost to ROTC students. A \$25 deposit is required temporarily from all students enrolling in ROTC until uniforms and property are returned in good condition. Any loss or damage to ROTC uniforms and equipment, exceeding the deposit, will be charged to the student.

### **Academic Credits**

Regulations of the individual Basic Colleges prescribe the number of hours of academic credit granted for ROTC classes.

## **AIR FORCE ROTC**

William R. Trott, Ph.D. Colonel, USAF  
*Director of the Office of Aerospace Studies, MIT*

Billy F. Webster, M.S. Major, USAF  
*Northeastern University Coordinating Officer*

Air Force ROTC is available to Northeastern University students through the Office of Aerospace Studies at MIT. While students will attend Aerospace Studies classes on the MIT campus, they are not required to enroll at MIT.

The Air Force ROTC program is designed to prepare students for commissions in the United States Air Force upon successful completion of a bachelor's degree. The Office of Aerospace Studies offers two programs — one of four years and one of two years — for Northeastern students to qualify for commissions.

The four-year program can be entered at the beginning of the freshman or sophomore year; the two-year program can be entered prior to the middler or junior years.

### **The Four-Year Program**

The four-year program consists of classroom and leadership laboratory work during four undergraduate years and one summer training period of four weeks at a United States Air Force Base between the second and third year of Air Force ROTC.

While in Air Force ROTC, students are furnished uniforms and equipment required for the program. Undergraduate students enrolled in the four-year program are offered an opportunity to compete, on a nationwide basis, in the college scholarship program. These scholarships provide full coverage for tuition, books, and required university fees plus a \$100 monthly subsistence allowance.

Unless the student accepts a scholarship, he or she is under no obligation to the government for the first two years of the four-year program. At the beginning of the third year, all students who have not already done so are required to sign a formal agreement that they will complete the last two years of Air Force ROTC and accept a commission as a Second Lieutenant in the United States Air Force when granted a degree from Northeastern. The term of active duty commitment after commissioning varies depending upon the professional area chosen.

For those entering research and development, engineering, or any other nonflying field, the term of service is four years. For pilots and navigators, the required term of service is five years after completion of flight training. Individuals may also apply to the Air Force for a delay in active duty, to pursue graduate study.

### **The Two-Year Program**

The two-year program is for those students who do not complete the first two years of the four-year Air Force ROTC program. Such students may apply as undergraduates or graduates if they have a minimum of two years remaining as full time students. In lieu of completing the first two years of the four-year program, these students receive six weeks of field training at an Air Force base during the summer preceding their entry into Air Force ROTC.

Students applying for this program may have to move co-op periods to enable them to attend this field training.

They receive the same benefits and complete the same academic program required of the upperclass four-year students. Students applying for the two-year program may also compete for scholarships.

### **Eligibility Requirements**

To be eligible to compete for a commission through the Air Force ROTC program, students must be: 1) citizens of the United States by the time they sign a formal agreement with the government; 2) physically qualified in accordance with existing Air Force regulations; 3) enrolled at Northeastern as full-time students.

### Application Procedure

Eligible freshmen can sign up for the Air Force ROTC program by simply electing Air Force ROTC subjects (91.201 and 91.202) when they arrive on campus; however, it is advisable for interested students to contact the Air Force ROTC Office as soon as they have been notified of admission to the University. Other interested students can make application by personal visit to the Office of Aerospace Studies, MIT, Building 20 Wing E, Room 111, Cambridge, Ma., or by calling (617) 253-4472.

## Cooperative Education

Roy L. Wooldridge, Ed.M., *Vice President for Cooperative Education*

Sidney F. Austin, M.Ed., *Associate Dean*

Thomas E. McMahon, M.Ed., *Associate Dean*



Cooperative Education is a dynamic system of education based on the principle that individuals can best be developed through an educational pattern that exposes them to the world beyond the boundaries of the campus. Through controlled and structured experiences, students bring an enrichment to the classroom which enhances their total development. The essential ingredients are that satisfactory participation in cooperative education is considered a degree requirement and that the institution assumes the responsibility for integrating it into the education process. It is called "cooperative education" because it is dependent upon the cooperation of outside agencies and educators in combining to form a superior total educational program.

Studies have shown that the reinforcement of classroom learning by job responsibilities increases a student's motivation and self-confidence. Greater interest in academic work develops when he sees the relationship between the job he holds and the principles he is studying on campus. These same cooperative experiences help to instill a sense of identity and worth as the student functions as an adult in an adult world.

Northeastern's commitment to cooperative education is illustrated by the diverse but related activities of the five departments within the Division of Cooperative Education. Each department makes a unique contribution to the development of cooperative education and the enhancement of its effect on Northeastern's students.

## The Department of Cooperative Education

Paul M. Pratt, M.Ed., *Dean*

Richard E. Sprague, M.B.A., M.Ed., C.A.G.S.

*Assistant Dean*

Charles F. Seaverns, Jr., Ed.M., C.A.G.S., *Director of  
Professional Development*

George A. Rowland, B.S., *Staff Specialist for Minority  
Affairs*

### FACULTY Professors

Nancy J. Caruso, M.Ed.

Charles F. Field, M.Ed.

### Associate Professors

Ernest V. Barrasso, M.Ed.

Boreslaw P. Berestecky, M.Ed.

Richard L. Canale, M.Ed., C.A.G.S.

Elizabeth A. Chilvers, M.Ed.

Robert D. Deforge, M.Ed.

John Dromgoole, M.Ed.

Philip W. Dunphy, M.Ed.

Mary R. Flynn, M.Ed.

John D. Hammond, M.P.A.

Kenneth R. Hancock, Jr., B.S.

George K. Howe, M.Ed.

Stephen M. Kane, M.Ed., M.S.,  
C.A.G.S.

Homer C. Littlefield, B.S.

Robert W. Miller, M.Ed.

Anthony R. Rotondi, M.Ed.

Jane S. Schachter, M.Ed.

Willie Smith, Jr., M.Ed.

Roderic W. Sommers, M.Ed.

Robert E. Vozzella, M.A.

### Assistant Professors

Betsey W. Blackmer, B.S.

Mark I. Conley, Jr., M.S., C.A.G.S.

Rosemarie DiMarco, M.S.

Gerard J. Lavoie, B.S.

Barbara A. Porter, M.Ed.

Mary E. Sandman, B.S.

Hugh J. Talbot, B.S.

### Instructors

Ellen J. Duwart, B.S.

Judith A. Moll, M.S.

William A. Sloane, M.B.A.

Robert R. Tillman, B.S.

This is the largest of the four departments and is responsible for the administration of the cooperative education program for undergraduate and graduate students at Northeastern. Details on the specifics of operation are explained on page 30 of this catalog and in a booklet entitled "Co-opportunities," which is available from the Department of Admissions on request.



## **The Department of Graduate Placement Services**

Alvah K. Borman, M.Ed., *Dean*

William F. Brady, Jr., M.B.A., *Director of Senior and Alumni  
Placement*

Francis L. Heuston, M.Ed., *Director of Educational Placement*

Thomas J. McEneaney, M.Ed., *Graduate and Professional School  
Counselor*

Jane M. Goring, B.S., *Alumni Placement Officer*

Evelyn Ashey, B.S., *Educational Placement Representative*

Katherine M. Owens, B.A., *Senior Placement Representative*

The Department of Graduate Placement Services offers a wide range of counseling and placement assistance to all seniors and alumni of Northeastern University and to undergraduates seeking admission to medical, law, and other professional schools.

Through this department, representatives of hundreds of employers are scheduled to visit the campus each year to interview seniors and graduate students for full-time employment after graduation. A job bank of currently available positions is maintained for alumni who are seeking new opportunities for which they may be qualified. Credential service is provided for students and alumni seeking positions in the field of education. Regularly scheduled seminars are conducted for seniors and alumni on career development, job finding techniques, resume preparation, and effective interviewing.



## **The Center for Cooperative Education and The Institute for Off-Campus Experience and Cooperative Education**

Paul E. Dubé, M.A., M.Ed., *Director, Center for  
Cooperative Education*

Charles E. Shain, Ph.D., LL.D., L.H.D., Litt.D., *Director, Institute  
for Off-Campus Experience and Cooperative Education*

Raymond R. Williams, B.A., *Assistant Director for Field Experience*

John K. Jessup, Jr., Ed.D., *Field Experience Specialist*

Ingrid Dinter, M.A.T., *Field Experience Specialist*

Patricia Molloy, M.A., *Field Experience Specialist*

Mary MacMillen, B.A., *Project Coordinator*

Joseph E. Barbeau, Ed.D., *Training Director*

Myrna N. Cornett, B.S., *Assistant Training Director*

Educational institutions and other organizations exploring, developing, expanding, or improving programs in cooperative education contact the Center for a variety of services. All facets of the establishment, operation, and expansion of programs may be explored with professional consultants familiar with all aspects of cooperative education.

Intensive, short-term training workshops for both new and experienced coordinators of cooperative programs and the four-week Summer Institute in Cooperative Education offering eight quarter-hours of credit are among the services offered by the Center.

The Institute provides counseling and placement assistance to colleges and universities which offer cooperative education programs or other types of off-campus educational experiences to their students.

Faculty coordinators from the Department of Cooperative Education work closely with the staff of the Institute in providing this assistance. Administrative costs of operating the Institute are shared by the participating institutions.

### **INTERNATIONAL PROGRAMS**

Donald R. Allen, Ph.D., *Director of International  
Programs*

Candace A. Herene, B.A., *Assistant to the  
Director of International Programs*

Northeastern University carries its unique program in cooperative education to the international scene by offering certain undergraduate and graduate students the opportunity to be placed abroad for their cooperative work. The University maintains an active foreign placement program in Germany, France, Britain, and Columbia for students whose linguistic, academic, and professional experience makes them attractive candidates for a position abroad.

In addition to direct placement abroad, exchanges for study or cooperative education work experience function with the following institutions:



Brunel University, Uxbridge, England. Study and work exchange for liberal arts students.

Ecole Supérieure de Commerce, Paris, France. Work exchange for students in business administration, liberal arts.

Ecole Supérieure de Physique et de Chimie Industrielles, Paris, France. Work exchange for students in physics, chemistry, mathematics, engineering.

Escuela de Administracion y Finanzas — Instituto Tecnológico, Medellín, Colombia. Work exchange for students in business administration, liberal arts.

Institut de Préparation à l'Administration et à la Gestion des Entreprises, Paris, France. Work exchange for students in business administration, liberal arts.

The Polytechnic of Wales, Glamorgan, Wales. Work exchange for students in engineering, business administration, education.

### **The Center for Secondary School Work Experience Education**

Ellen N. Winer, Ed.D., *Director*

Ruth M. Hochman, B.S., *Assistant to the Director*

A full complement of consulting, training, and research services is available to schools and other educational facilities, community groups, and employers interested in implementing or expanding work experience programs at the secondary school level. These services are designed to assist school faculty who have primary responsibility for initiating and conducting work experience programs to plan, implement, and evaluate their efforts.

### **The Cooperative Education Research Center**

James W. Wilson, Ph.D., *Asa Smallidge Knowles Professor of Cooperative Education and Director*

#### **Research Associates**

G. Ruth Kukiela Bork, M.Ed.

Sylvia J. Brown, M. Ed.

#### **Research Assistants**

Etsuko Kumai, A.B.

Cynthia Whitten, B.A.

Several aspects of cooperative education are being investigated, published, and disseminated among the cooperative education community. The purpose of these studies is to aid practitioners in the field so that they can be of greater service to students enrolled in cooperative education programs. As a part of its research activity, the Research Center has established an Information Clearinghouse to store information about cooperative education and make it available to interested people throughout the country. A library of cooperative education and related material is maintained for research and consulting purposes.



## University Libraries

### PRINCIPAL UNIVERSITY LIBRARY OFFICERS

<b>Director</b> , University Libraries Roland H. Moody, A.B., B.L.S.	Arline Willar, M.S. Asst. Librarian for Public Service
Albert M. Donley, M.S. Associate Director, Archivist of the University and Curator of Rare Books Library	Anastasia Cakste, M.L.S. Physics/Electrical Engineering Divisional Librarian
Thomas H. Cahalan, M.S. Asst. Librarian for Acquisitions	Richard S. Ross, M.S.L.S. Mathematics/Psychology Divisional Librarian
Ralph J. Coffman, Jr., Ph.D. Librarian, Burlington Campus	Mark Alpert, M.S.L.S. Circulation Librarian
Joyce E. Lunde, A.A. Asst. Librarian for Reference Bibliographies and Documents	Sharon C. Bonk, M.A., M.A.L.S. Periodicals Librarian
Robert G. Murray, M.Ed., M.L.S. Asst. Librarian for Cataloging	Nieves Farin, M.S.L.S. Selection Librarian
Maurice Rahilly, M.L.S. Asst. Librarian for Divisional Libraries	Roxanne B. Palmatier, M.S.L.S. Documents Librarian
	Vivian A. Rosenberg, M.Ed., M.L.S. Audio Facility Librarian

*"All that mankind has done, thought, gained, or been: it is lying as in magic preservation in the pages of books."*—Thomas Carlyle

The University Libraries endeavor to provide the informational and bibliographic services required by students and scholars working in subject fields covered by University programs of instruction and research. In all, the collections include more than 412,000 cataloged volumes. In addition, the Library holds in excess of 365,000 titles on microform including the comprehensive *Libraries of American Civilization and English Literature*.

The microform collection includes microprint, microfilm, and microfiche with appropriate equipment for reading.

Periodicals (approximately 3,775 titles received currently), government documents relevant to the University, technical reports, pamphlets, and recordings (more than 5,000) enhance the collections. There are duplicating facilities available in all libraries.

### Libraries

The Dodge Library houses the main collections, the main bibliographic resources for the library system, the central processing units,





and library administration. Its six air-conditioned reading rooms, many recently renovated, include the Richardson Room, which provides audio equipment; the Reference Room, with a collection in excess of 20,000 volumes including almanacs, atlases, bibliographies, biographical dictionaries, business services, dictionaries, directories, encyclopedias, gazetteers, handbooks and manuals, indexes and abstracts, and technical reports; the Periodical Room; the Documents Room; the Microform Room; and the Reserve Book Room with a 20,000-volume collection.

Additional libraries include the divisional libraries of Physics/Electrical Engineering, Mathematics/Psychology, and the Hurtig Hall Library (Chemistry, Biology, and Pharmacy)—all graduate level collections; the Boston-Bouvé College Library; and the School of Law Library. The Suburban Campus at Burlington has its own library, and there are also collections at the Marine Science Institute in Nahant, the Center for Management Development in Andover, and at Wiggins Airways in Norwood.

### **Services and Hours**

A handbook, A-V aids, bibliographic guides, and lectures introduce students to methods of utilizing the resources of the collections, and a dedicated staff is prepared to help users of the various libraries. All members of the University, and others at the discretion of the Librarian, have the use of reference books, government documents, card catalogs, and service. During term time, most libraries are open 7:45 a.m. to 10:00 p.m., Monday through Thursday, 7:45 a.m. to 7:30 p.m. on Friday, 1:00 p.m. to 5:00 p.m., Saturday and Sunday with certain areas in the Dodge Library open later hours in the evening.

### **New England Library Information Network**

The Northeastern Libraries have computerized many operations internally and, in addition, hold membership in the New England Library Information Network. NELINET has been established for the purpose of developing and operating major library support services. It is a network of libraries devoted to sharing financial, human, and material resources to reduce cost and redundancy, and to expand the timeliness and variety of services available.

## Office of Learning Resources

Mina B. Ghattas, Ph.D., *Director*

*The Office of Learning Resources (OLR) provides faculty, students and staff with a variety of instructional services, equipment, and learning facilities.*

*The Learning Resources Center furnishes students with individualized study and language lab facilities for remedial, supplementary, or enrichment purposes in many subject areas in many formats—programmed texts, audiotapes, videotapes, and sound filmstrips, among others. A listening lounge, equipped with a stereophonic sound system, supplies a large selection of classical and popular prerecorded music. Students may use all LRC facilities independently or to complete class assignments at no cost during day, evening, and weekend hours.*

*The Media Production and Training Laboratory provides facilities for both students and faculty for producing original materials, such as overhead transparencies, audiotapes, illustrations, slides, posters, and charts. Training is given in the use of all equipment, including that used for television production in a mini-studio. Training workshops may be arranged for organized groups.*

*Campus Media Services makes available all types of audiovisual and video equipment and instructional materials for the support of classroom instruction on a prescheduled basis. Items include film, filmstrip, slide, opaque and overhead projectors, audio and videotape recorders, TV cameras and monitors, portable public address systems, telelecture equipment, record players, and projection screens. This section also distributes instructional materials from the NU-owned collection, such as 16mm films, videotapes, filmstrips, film loops, slides, and audio cassettes. Certain equipment is reserved for student use, and students may also borrow instructional materials with faculty approval. A catalog of all instructional materials is available at no charge.*

*The Instructional Materials Center, which acquires and maintains the collection of NU-owned instructional materials, also provides a rental service for 16mm films and videotapes obtained from outside sources. Faculty who would like to evaluate instructional materials before purchase make use of its preview service. Preview facilities are available for small-group viewing of all types of materials by members of the University community. An up-to-date collection of research reports, periodicals, instructional materials, catalogs, and other reference volumes on all aspects of instructional media and technology is similarly accessible.*

*The Instructional Development Center assists individual faculty with specifying instructional goals, reviewing related literature and materials, examining alternative teaching strategies, producing learning materials, and evaluating course effectiveness. Its training in presentation and teaching techniques is complementary to its basic function of developing instructional units and courses.*



## University Health Services

### Lane Health Center

Job E. Fuchs, M.D., *Director*

A comprehensive program of medical care is provided to all full-time registered students in the Basic Colleges, both graduate and undergraduate. The University maintains a Health Services Clinic in the Forsyth Building, Room 135, which is open for emergencies at all times, and is equipped to deal promptly with any medical condition that may arise. All entering students must file a record of physical examination with Health Services. Failure to fulfill this requirement can delay registration and result in a penalty fee and an additional fee for a physical examination. Regular clinic hours for the student body are held by staff physicians from 9:00 a.m. to 4:30 p.m., Monday through Friday. Health Services can be reached at all times by telephoning 437-2772.

Specialty clinics in surgery, orthopedic surgery, gynecology, and fertility control and planning are scheduled at specified hours. Please check times with the Health Services office. Pregnancy testing and venereal disease diagnosis and treatment services are always available during clinic hours.

Special x-ray and laboratory procedures that are unavailable in the Health Services, but that are deemed necessary by a staff physician, will be provided. A full spectrum of mental health services is available. A mental health specialist is present daily, and students are urged to use his services even for minor emotional upsets.

Students who become ill while attending classes, examinations, or other activities should report immediately to the University Health Services. Accident or illness requiring the services of a family physician or local hospital should be reported as soon as a student returns to class.

All full-time graduate and undergraduate students are covered by a special Blue Cross and Blue Shield policy which remains in effect continuously from the day of initial registration until the first of the month following withdrawal, dismissal, or graduation. Married students may see the Bursar about purchasing supplementary coverage for dependents.

An infirmary is also maintained in the Forsyth Building for the care of students living in University dormitories and apartment houses. The required fee entitles students to twenty days care in the infirmary at no additional charge.



### The Center for Reading Improvement

The Center for Reading Improvement offers a special non-credit course (SPEED READING) designed to improve skills in rapid, study,

critical, and pleasure reading. Whether the desire is to increase speed or improve understanding — or both — students are taught to apply tested reading and study techniques which strengthen accuracy and recall in all normal reading assignments.

Classes meet one evening a week from 7:00-9:30 and run for one quarter. Students may register during the first week of the Fall, Winter, Spring, or Summer Quarter and will be given a choice of several classes scheduled throughout the week.

There is a discount tuition rate for full-time undergraduate students and all materials are supplied at no expense.

## **The Counseling and Testing Center**

### **Director**

Philip W. Pendleton, Ph.D.

### **Assistant Director**

Priscilla Belcher, Ed.M.

### **Counselors/Psychologists**

David M. Fischl, M.Ed.

Alan O'Hare, M.Ed.

Richard S. Seaman, M.A.

Susan R. Hoffman, Ed.M.

Donald K. Tucker, M.Ed.

The purpose of the Counseling and Testing Center is to help students in a wide variety of areas such as career planning, personal problems, study skills, emotional troubles, choice of major, and inter-personal relationships. At the Center, the student is encouraged to discuss his concerns with a counseling psychologist, following which he might take one or more of these steps: continue individual counseling; take psychological tests to increase his knowledge of himself; join a group of students with whom he can share his concerns; and make use of the Center's extensive file of information about careers and services.

The Center's services are available without charge to all students in the Basic Colleges. Students can arrange an appointment by telephoning (617) 437-2142 or by visiting the Center in Room 302 Ell. Vocational counseling services are also available on a fee basis to high school students and adults.

The counseling services of the Counseling and Testing Center are approved by the International Association of Counseling Services.

## **The Computation Center**

The Computation Center has proved to be invaluable both for teaching and research purposes. Several hundred students have programs run on the computer each day. Both faculty members and students use the Center for nonsponsored research and thesis work.

An increasing amount of research is sponsored by both governmental departments and industrial concerns.

# The Governing Boards and Officers of the University

August, 1977

## THE CORPORATION

Julius Abrams  
Charles F. Adams  
Vernon R. Alden  
William T. Alexander  
William F. Allen, Jr.  
O. Kelley Anderson  
\* Diana J. Auger

Allen G. Barry  
Lincoln C. Bateson  
Thomas P. Beal  
\* Roy H. Beaton  
\* F. Gregg Bemis  
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S. Whitney Bradley  
Rexford A. Bristol  
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Martin Brown  
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John L. Burns  
Hyman H. Burstein  
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# Academic Calendar 1977-1979

## September 1977

5	Monday	LABOR DAY. University closed.
6-9	Tuesday-Friday	Final Examinations for Basic Colleges.
12-24	Monday-Saturday	Division A vacation.
15	Thursday	FALL COMMENCEMENT.
26	Monday	Beginning of 1977-1978 academic year. Upper class registration for Divisions A and C. Boston and Burlington freshmen complete their registration. No Basic Colleges classes today.

## October 1977

10	Monday	COLUMBUS DAY. University closed.
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## November 1977

1	Thursday	VETERANS' DAY. University closed.
4-26	Thursday-Saturday	THANKSGIVING DAY recess.

## December 1977

2-16	Monday-Friday	Final Examinations for Basic Colleges.
9-Jan. 2	Monday-Friday	CHRISTMAS vacation.

## January 1978

	Monday	NEW YEAR'S DAY Observance University closed.
	Tuesday	Registration for upper-class Divisions B and C. Registration for freshmen (Quarter Two) at Boston Campus, Burlington Campus, and January freshmen section of Class of 1982. Beginning of Winter Quarter. Beginning of Division A work quarter. No Basic Colleges classes today.
6	Monday	MARTIN LUTHER KING, JR'S. BIRTHDAY. University closed.

## February 1978

10	Monday	WASHINGTON'S BIRTHDAY. University closed.
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## March 1978

10-24	Monday-Friday	Final Examinations for Basic Colleges.
27-31	Monday-Friday	Vacation period for all students in all colleges and schools (Division B vacation).

## April 1978

	Monday	Registration for Divisions A and C students and Division B seniors. Registration for freshmen (Quarter Three) at Boston Campus, Burlington Campus, and January freshmen (Quarter Two). Beginning of Spring Quarter. Beginning of Division B work period. No Basic Colleges classes today.
7	Monday	PATRIOTS' DAY. University closed.

## May 1978

9	Monday	MEMORIAL DAY. University closed.
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## June 1978

2-16	Monday-Friday	Final Examinations for Basic Colleges.
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18	Sunday	COMMENCEMENT.
19-23	Monday-Saturday	Division A vacation.
26	Monday	Registration for Divisions B and C and January freshmen (Quarter Three) Beginning of Summer Quarter. Beginning of Division A work quarter. No Basic Colleges classes today.
<b>July 1978</b>		
4	Tuesday	INDEPENDENCE DAY. University closed.
<b>September 1978</b>		
4	Monday	LABOR DAY. University closed.
5-8	Tuesday-Friday	Final Examinations for Basic Colleges.
11-23	Monday-Saturday	Division B vacation.
14	Thursday	FALL COMMENCEMENT.
25	Monday	Beginning of 1978-1979 academic year. Upper-class registration for Divisions B and C. No Basic Colleges classes today.
<b>October 1978</b>		
9	Monday	COLUMBUS DAY. University closed.
<b>November 1978</b>		
11	Saturday	VETERANS' DAY. University closed.
23-25	Thursday-Saturday	THANKSGIVING DAY recess.
<b>December 1978</b>		
11-15	Monday-Friday	Final Examinations for Basic Colleges.
18-Jan. 1	Monday-Friday	CHRISTMAS vacation.
<b>January 1979</b>		
1	Monday	NEW YEAR'S DAY. University closed.
2	Tuesday	Registration for upper-class Divisions A and C. Registration for freshmen (Quarter Two) at Boston Campus, Burlington Campus, and January freshmen section of Class of 1983. Beginning of Winter Quarter. Beginning of Division B work quarter. No Basic Colleges classes today.
15	Monday	MARTIN LUTHER KING, JR'S. BIRTHDAY. University closed.
<b>February 1979</b>		
19	Monday	WASHINGTON'S BIRTHDAY. University closed.
<b>March 1979</b>		
19-23	Monday-Friday	Final Examinations for Basic Colleges.
26-31	Monday-Saturday	Vacation period for all students in all colleges and schools (Division A vacation).
<b>April 1979</b>		
2	Monday	Registration for Divisions B and C students and Division A seniors. Registration for freshmen (Quarter Three) at Boston Campus, Burlington Campus, and January freshmen (Quarter Two). Beginning of Spring Quarter. Beginning of Division A work period. No Basic Colleges classes today.
16	Monday	PATRIOTS' DAY. University closed.
<b>May 1979</b>		
28	Monday	MEMORIAL DAY. University closed.
<b>June 1979</b>		
11-15	Monday-Friday	Final Examinations for Basic Colleges.
17	Sunday	COMMENCEMENT.
18-23	Monday-Saturday	Division B vacation.

25

Monday Registration for Divisions A and D and January freshmen (Quarter Three).  
Beginning of Summer Quarter.  
Beginning of Division B work quarter.  
No Basic Colleges classes today.

July 1979

4

Wednesday INDEPENDENCE DAY. University closed.

September 1979

3

Monday LABOR DAY. University closed.

4-7

Tuesday-Friday Final Examinations for Basic Colleges.

10-22

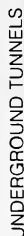
Monday-Friday Division A vacation.

13

Saturday FALL COMMENCEMENT.

24

Monday Beginning of 1978-1979 academic year. Upper-class registration for Divisions A and C. Boston and Burlington freshmen complete their registration.  
No Basic Colleges classes today.



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**1977 • 1978**  
**BASIC DAY COLLEGES**  
**CURRICULUM GUIDE**  
**AND**  
**COURSE DESCRIPTIONS**  
**ADDENDUM**



**NORTHEASTERN**  
**UNIVERSITY**





# **NORTHEASTERN UNIVERSITY**

## **CURRICULUM GUIDE AND COURSE DESCRIPTIONS**

### **Addendum to 1976-1977 Guide**

Boston-Bouvé College  
College of Business Administration  
College of Criminal Justice  
College of Education  
College of Engineering  
Lincoln College  
College of Liberal Arts  
College of Nursing  
College of Pharmacy and  
Allied Health Professions

*This addendum contains the **new** curriculum guide and **new** courses for 1977-1978; it also indicates amended and deleted courses and any title changes. It should be used with last year's guide which has been reprinted. Students had been requested to retain their copies of the 1976-1977 Course Descriptions and Curriculum Guide.*

**A complete new edition will be issued for the 1978-1979 academic year.**

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Northeastern University charges tuition for all courses taken above the normal academic load.

The University reserves the right to make changes in the regulations and courses announced in this bulletin.

Printed by Northeastern University Press.

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**Equal Opportunity Policy**

Northeastern University is committed to a policy of providing equal opportunity for all. In all matters involving admissions, registration, and all official relationships with students, including evaluation of academic performance, the University insists on a policy of nondiscrimination. Northeastern University is also an equal/opportunity employer; it is institutional policy that there shall not be any discrimination against any employee or applicant for employment because of race, color, religion, sex, age, national origin, or on the basis of being a handicapped but otherwise qualified individual. In addition, Northeastern takes affirmative action in the recruitment of students and employees. Inquiries concerning our equal opportunity policies may be referred to the University Affirmative Action Officer and/or the Title IX coordinator.

## **Boston-Bouvé College**

### **PHYSICAL EDUCATION— Men and Women**

10.104, Fundamentals of Mathematics or General Studies elective; 50.121, Human Development and Learning I; 62.250, Anatomy and Physiology I; Physical Education elective; General Studies elective.	<b>Quarter 4</b>
50.131, Human Development and Learning II; 50.142, Introduction to Educational Statistics; 62.251, Anatomy and Physiology II; 62.218, Elementary School Activities or General Studies elective; Physical Education elective. Before registering for Quarter 6, each student will be asked to designate a level of teaching option: elementary or secondary physical education.	<b>Quarter 5</b>
62.221, Perceptual-Motor Learning and Development; 62.252, Anatomy and Physiology III; 62.255, Adapted Physical Education; 62.275, Critical Teaching Skills; Physical Education elective.	<b>Quarter 6</b>
62.210, History and Philosophy of Physical Education; 62.253, Kinesiology; 62.260, Measurement and Evaluation; Physical Education elective; General Studies elective.	<b>Quarter 7</b>
62.254, Exercise Physiology; two Analysis and Coaching electives; two General Studies electives.	<b>Quarter 8</b>
62.277, Outdoor Teaching Laboratory; 62.218, Elementary School Activities I or 62.256, Athletic Training and Conditioning; two Analysis and Coaching electives; two Boston-Bouvé College electives; 62.212 or 62.217 and one other elective.	<b>Quarter 9</b>
62.282, Supervised Student Teaching.	<b>Quarter 10</b>
62.270, Administration of Physical Education; 62.280, Curriculum Development; Boston-Bouvé College elective; General Studies elective.	<b>Quarter 11</b>

### **HEALTH EDUCATION**

19.105, Foundations of Psychology I; 50.121, Human Development and Learning I; 62.250, Anatomy and Physiology I; General Studies elective.	<b>Quarter 4</b>
19.106, Foundations of Psychology II; 50.131, Human Development and Learning II; 62.251, Anatomy and Physiology II; 62.116, Nutrition.	<b>Quarter 5</b>

- Quarter 6** 18.120, Microbiology; 20.100, Social Anthropology; 62.252, Anatomy and Physiology III; 65.114, Mental Health.
- Quarter 7** 50.141, Measurement and Evaluation; 65.222, Drug Use and Abuse; 65.225, Communicable and Degenerative Diseases; General Studies elective.
- Quarter 8** 56.120, Introduction to Special Education; 65.217, Teaching Procedures/Curriculum in Health Education in School and Community; 65.223, Human Sexuality and the Family; General Studies elective.
- Quarter 9** 65.140, Concepts in Health, Aging and Longevity; 65.219, Evolving Patterns of Community Health; 65.238, Seminar Health Education; General Studies electives.
- Quarter 10** 65.240, Practicum in School Health; 65.241, Practicum in Community Health.
- Quarter 11** 65.233, Organization and Administration of School and Community Health; 65.235, Health Counseling; 65.239, Seminar Health Education; 50. , Human Foundations elective.

## PHYSICAL THERAPY

- Quarter 4** 11.171, Physics for the Life Sciences I; 11.173, Physics Laboratory for the Life Sciences I; 18.143, Human Physiology I; 62.221, Perceptual Motor Learning; electives.
- Quarter 5** 11.172, Physics for the Life Sciences II; 18.144, Human Physiology II; 18.148, Human Anatomy; 64.115, Introduction to Physical Therapy; 19.106, Foundations of Psychology II.
- Quarter 6** 64.123, Gross Anatomy; 64.125, Physiology for Physical Therapists; 64.141, Physical Therapy I; 64.210, Pathology; 64.227, Clinical Medicine I; 64.234, Clinical Psychiatry.
- Quarter 7** 64.130, Applied Anatomy; 64.142, Physical Therapy II; 64.143, Physical Therapy III; 64.229, Clinical Medicine II.
- Quarter 8** 64.156, Physical Therapy IV; 64.158, Physical Therapy V; 64.250, Neuroanatomy.
- Quarter 9** 64.159, Clinical Seminar; 64.169, Physical Therapy VII; 64.184, Supervised Clinical Education; 64.230, Clinical Medicine III. 64.171, Physical Therapy VI.
- Quarter 10** 64.167, Research Design; 64.173, Rehabilitation; 64.178, Physical Therapy VIII; two electives.
- Quarter 10A** 64.194, Supervised Clinical Education II.
- Quarter 11** 64.176, Administration; 64.182, Psycho-Social Aspects of Illness; 64.239, Investigative Studies; elective.

**RECREATION  
EDUCATION**

50.121, Human Development and Learning; Earth Science elective; 63.150, Anatomy and Physiology I; 63.148, Introduction to Out- doors or 63.255, Introduction to Therapeutic Recreation or 63.263, Introduction to Community Recreation; Recreation Skills.	<b>Quarter 4</b>
50.131, Human Development and Learning II; Earth Science elective; 63.151, Anatomy and Physiology II; 63.12P, Sports Leadership or 63.12Q, Survey Aquatics; Skills.	<b>Quarter 5</b>
29.163, Workshop Drama; two-three electives; Skills.	<b>Quarter 6</b>
63.128, Survey of Recreation Facilities; three-four electives; Skills.	<b>Quarter 7</b>
63.250, Group Dynamics; three-four electives.	<b>Quarter 8</b>
63.280, Supervised Field Experience.	<b>Quarter 9</b>
63.285, Research; three-four electives.	<b>Quarter 10</b>
63.290, Senior Seminar; three-four electives.	<b>Quarter 11</b>

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63.127 Outdoor Education II	7-8-11
63.129 School Camping (spring)	7-11
63.145 Winter Sports (winter)	8-10
63.146 Camp Administration	10
63.147 Outdoor Education for Handicapped (summer only)	7
63.149 Elements of Outdoor Planning	6-8
63.152 Analysis of Movement as Applied to Recreation (spring)	7-11
63.153 Psychological Aspects of Disabilities	6-8-10
63.210 Philosophy of Recreation and Leisure (spring)	7-11
63.216 Seminar on Outdoor Issues and Legislation	6-8-10
63.220 Methods and Materials in Recreation	6-8-10
63.249 Process of Aging	8-10
63.256 Activities for Special Populations	8-10
63.257 Adaptive Workshop (spring only)	7-11
63.260 Administration of Parks and Recreation	6-8-10
63.262 Budget and Finance	6-8-10
63.264 Program Evaluation	
63.266 Community Schools	7-11
63.268 Urban Recreation	

## College of Business Administration

### ACCOUNTING

- Quarter 4** 49.250, Quantitative Methods I; 41.113, Accounting Principles III or liberal elective; two liberal electives.
- Quarter 5** 49.251, Quantitative Methods II; 41.113, Accounting Principles II or liberal elective; two liberal electives.
- Quarter 6** 41.251, Intermediate Accounting; 45.209, Organization Behavior I; two liberal electives.
- Quarter 7** 41.252, Intermediate Accounting; 41.254, Cost Accounting; 45.210, Organization Behavior II; liberal elective.
- Quarter 8** 41.262, Accounting Theory and Practice or 41.263, Accounting Planning and Control; liberal elective; Business elective; open elective.
- Quarter 9** 45.250, Business and Society; liberal elective; open elective; Accounting elective.
- Quarter 10** 45.112, Business Policy; liberal elective; two open electives.
- Quarter 11** All open electives.

### ENTREPRENEURSHIP AND NEW VENTURE MANAGEMENT

- Quarter 4** 49.250, Quantitative Methods I; three liberal electives.
- Quarter 5** 49.251, Quantitative Methods II, three liberal electives.
- Quarter 6** 45.209, Organization Behavior I; 45.212, New Venture Creation; liberal elective; open elective.
- Quarter 7** 45.210, Organization Behavior II; liberal elective; two open electives.
- Quarter 8** 45.130, Operations Analysis and Venture Capital; liberal elective; open elective; Business elective.
- Quarter 9** 44.159, Small Business Finance; 45.250, Business and Society; liberal elective; open elective.
- Quarter 10** 45.112, Business Policy; liberal elective; open elective; Business elective.
- Quarter 11** 49.107, Small Business Management; Business elective; two open electives.

*\*Placement of 43.120, Introduction to Marketing and 44.120, Introduction to Finance will be announced by September 1977.*



**FINANCE AND  
INSURANCE**

49.250, Quantitative Methods I; three liberal electives.	<b>Quarter 4</b>
49.251, Quantitative Methods II; three liberal electives.	<b>Quarter 5</b>
44.152, Managerial Finance I; 44.275, Money and Economic Activity; 45.209, Organization Behavior I; liberal elective.	<b>Quarter 6</b>
44.153, Managerial Finance II; 44.181, Investment management; 45.210, Organization Behavior II; liberal elective.	<b>Quarter 7</b>
Liberal elective; Finance elective; Business elective; open elective.	<b>Quarter 8</b>
45.250, Business and Society; Finance elective; liberal elective; open elective.	<b>Quarter 9</b>
45.112, Business Policy; liberal elective; two open electives.	<b>Quarter 10</b>
All open electives.	<b>Quarter 11</b>

**GENERAL BUSINESS  
ADMINISTRATION**

49.250, Quantitative Methods I; three liberal electives.	<b>Quarter 4</b>
49.251, Quantitative Methods II; three liberal electives.	<b>Quarter 5</b>
45.209, Organization Behavior I; liberal elective; Business elective; open elective.	<b>Quarter 6</b>
45.210, Organization Behavior II; liberal elective; Business elective; open elective.	<b>Quarter 7</b>
Liberal elective; two Business electives; open elective.	<b>Quarter 8</b>
45.250, Business and Society; liberal elective; Business elective; open elective.	<b>Quarter 9</b>
45.112, Business Policy; liberal elective; Business elective; open elective.	<b>Quarter 10</b>
Business elective; three open electives.	<b>Quarter 11</b>

**HUMAN RESOURCES  
MANAGEMENT**

49.250, Quantitative Methods I; three liberal electives.	<b>Quarter 4</b>
49.251, Quantitative Methods II; three liberal electives.	<b>Quarter 5</b>
45.209, Organization Behavior I; two open electives; liberal elective.	<b>Quarter 6</b>
45.210, Organization Behavior II; 45.272, People and Productivity; open elective; liberal elective.	<b>Quarter 7</b>
45.273, Personnel Administration or 45.215, Organizational Structure and Process; open elective; liberal elective; Human Resources Management elective.	<b>Quarter 8</b>

*\*Placement of 43.120, Introduction to Marketing and 44.120, Introduction to Finance will be announced by September 1977.*

- Quarter 9** 45.250, Business and Society; open elective; liberal elective; Human Resources Management elective.
- Quarter 10** 45.274, Contemporary Labor Issues or 45.216, Managerial Skills Seminar; 45.112, Business Policy; Human Resources Management elective; liberal elective.
- Quarter 11** Business elective; three open electives.

## **INTERNATIONAL BUSINESS ADMINISTRATION**

- Quarter 4** 49.250, Quantitative Methods I; three liberal electives.
- Quarter 5** 49.251, Quantitative Methods II; three liberal electives.
- Quarter 6** 45.209, Organization Behavior I; 46.100, Introduction to International Business; liberal elective; open elective.
- Quarter 7** 45.210, Organization Behavior II; Business elective; Liberal International elective; open elective.
- Quarter 8** Liberal International elective; Business elective; liberal elective; open elective.
- Quarter 9** 45.250, Business and Society; Business elective; Business International elective; open elective.
- Quarter 10** 45.112, Business Policy; liberal elective; two open electives.
- Quarter 11** 46.101, Seminar in International Business; Business International elective; two open electives.

## **MANAGEMENT**

- Quarter 4** 49.250, Quantitative Methods I; three liberal electives.
- Quarter 5** 49.251, Quantitative Methods II; three liberal electives.
- Quarter 6** 45.209, Organization Behavior I; 49.206, Management Information Systems; liberal elective; open elective.
- Quarter 7** 45.210, Organization Behavior II; 45.272, People and Productivity; 41.205, Cost Accounting for Management; open elective.
- Quarter 8** 49.155, Legal Aspects of Business; Business elective; two liberal electives.
- Quarter 9** 45.250, Business and Society; 45.265, Production Management; liberal elective; open elective.
- Quarter 10** 45.112, Business Policy; liberal elective; two open electives.
- Quarter 11** Three open electives, Business elective.

## MARKETING

49.250, Quantitative Methods I; three liberal electives.	Quarter 4
49.251, Quantitative Methods II; three liberal electives.	Quarter 5
43.250, Marketing Management I; 45.209, Organization Behavior I; liberal elective; open elective.	Quarter 6
43.251, Marketing Management II; 45.210, Organization Behavior II; liberal elective; open elective.	Quarter 7
43.240, Marketing Research; liberal elective; Business elective; open elective.	Quarter 8
45.250, Business and Society; Marketing elective; liberal elective; open elective.	Quarter 9
43.278, Competitive Strategy; 45.112, Business Policy; liberal elective; open elective.	Quarter 10
Marketing elective; three open electives.	Quarter 11

## TRANSPORTATION AND PHYSICAL DISTRIBUTION MANAGEMENT

49.250, Quantitative Methods I; three liberal electives.	Quarter 4
49.251, Quantitative Methods II; three liberal electives.	Quarter 5
48.101, Principles of Transportation; 45.209, Organization Behavior I; liberal elective; open elective.	Quarter 6
45.210, Organization Behavior II; 48.102, Current Issues in Transportation Policy; liberal elective; open elective.	Quarter 7
Transportation elective; Business elective; liberal elective; open elective.	Quarter 8
45.250, Business and Society; 48.104, Physical Distribution Management; liberal elective; open elective.	Quarter 9
45.112, Business Policy; Transportation elective; liberal elective; open elective.	Quarter 10
48.120, Seminar in Transportation; three open electives.	Quarter 11

*\*Placement of 43.120, Introduction to Marketing and 44.120, Introduction to Finance will be announced by September 1977.*

## **College of Criminal Justice**

### **CRIMINAL JUSTICE**

- Quarter 4** 19.120, Statistics in Psychology I; 92.137, Criminology,; 92.141, Criminal Law; 11.113, Physics for Criminal Justice Students I or 12.139, General Chemistry or 18.114, Functional Human Anatomy I.
- Quarter 5** 22.141, State Government and Politics; 92.134, Constitutional Problems I; 92.157, Research Methods in Criminal Justice; 11.114, Physics for Criminal Justice Students II or 12.140, General Chemistry or 18.115, Functional Human Anatomy II.
- Quarters 6-11** Eight Quarter hours of Criminal Justice electives or Eight Quarter hours of Non-Criminal Justice electives.

# College of Education

To earn a Bachelor of Science degree in Education, all students must complete certain professional courses, as well as:

- 1. Satisfy *distribution requirements* with at least 16 quarter hours in each one of these areas: Humanities, Mathematics/Science, Social Sciences.
- 2. Satisfy the *concentration requirement* with a minimum of 40 quarter hours of approved courses. *Elementary Education* majors must select an area of concentration from the following: Humanities, Language-Reading, Mathematics and Science, Social Science, Special Education, and Early Childhood Education.
- 3. Complete a number of *specified electives* that are offered by the College of Liberal Arts and the College of Education.

As early as possible students should discuss their curriculum questions and academic needs with a representative of the Dean's office.

## ELEMENTARY EDUCATION

56.120, Introduction to Special Education; 50.121, Human Development and Learning I; 39.115, Principles and Problems of Economics; specified electives.	Quarter 4
Specified electives.	Quarter 5
51.131, Fundamentals of Arithmetic I; 51.133, Fundamentals of Reading I; 51.135, Analysis of Teaching and Educational Process; specified elective.	Quarter 6
51.132, Fundamentals of Arithmetic II; 51.134, Fundamentals of Reading II; specified electives.	Quarter 7
51.141, Elementary Education; 90.253, Professional Development for Teachers; specified electives.	Quarter 8
50.141, Measurement and Evaluation; 51.142, Elementary Education Compendium II; specified electives.	Quarter 9
Specified electives.	Quarter 10
Specified electives.	Quarter 11

## TEACHING OF BIOLOGY

50.131, Human Development and Learning II; 12.144, Organic Chemistry; 18.133, Plant Biology; specified elective.	Quarter 4
18.134, Environmental and Population Biology; specified electives.	Quarter 5

- Quarter 6** 11.171, Physics for Life Sciences I; 18.135, Genetics and Development Biology; 51.135, Analysis of Teaching and Educational Process; specified elective.
- Quarter 7** 11.172, Physics for Life Sciences II; 18.136, Cell Physiology and Biochemistry; specified electives.
- Quarter 8** 51.147, Methods and Materials of Teaching the Sciences; 50.141, Measurement and Evaluation; 90.253, Professional Development for Teachers; specified electives.
- Quarter 9** Specified electives.
- Quarter 10** Specified electives.
- Quarter 11** Specified electives.

## **TEACHING OF CHEMISTRY**

- Quarter 4** 11.117, Physics for Science Majors; 11.147, Physics Laboratory; 12.153, Organic Chemistry; 50.131, Human Development and Learning II; specified elective.
- Quarter 5** 11.119, Physics for Science Majors; 11.148, Physics Laboratory; 12.154, Organic Chemistry; specified electives.
- Quarter 6** 12.161, Physical Chemistry; 51.135, Analysis of Teaching and Educational Process; specified electives.
- Quarter 7** 12.162, Physical Chemistry; specified electives.
- Quarter 8** 12.168, Physical Chemistry; 12.179, Instrumental Analysis; 50.141, Measurement and Evaluation; 51.147, Methods and Materials of Teaching the Sciences; 90.253, Professional Development for Teachers.
- Quarter 9** 12.213, Inorganic Chemistry; 12.253, Identification of Organic Compounds; specified electives.
- Quarter 10** 12.171, Analytical Chemistry; specified electives.
- Quarter 11** Specified electives.

## **TEACHING OF EARTH SCIENCE**

- Quarter 4** 11.171, Physics for Life Sciences I; 16.201, Physical Geology; 16.203, Physical Geology Laboratory; 50.131, Human Development and Learning II; specified elective.
- Quarter 5** 11.172, Physics for Life Sciences II; 16.202, Historical Geology; 16.204, Historical Geology Laboratory; specified electives.
- Quarter 6** 51.135, Analysis of Teaching and Educational Process; specified electives.
- Quarter 7** Specified electives.
- Quarter 8** 51.147, Methods and Materials of Teaching the Sciences; 50.141, Measurement and Evaluation; 90.253, Professional Development for Teachers; specified electives.

Specified electives.	Quarter 9
Specified electives.	Quarter 10
Specified electives.	Quarter 11

## TEACHING OF ENGLISH

30.110, Literary Analysis: Poetry; 50.131, Human Development and Learning II; specified electives.	Quarter 4
30.111, Literary Analysis: Fiction or 30.112, Literary Analysis: Drama; specified electives.	Quarter 5
26.150, Introduction to Logic, 30.120, Introduction to Linguistics or 30.130, Introduction to Semantics; 51.135, Analysis of Teaching and Educational Process; specified electives.	Quarter 6
Specified electives.	Quarter 7
30.250, Shakespeare; 50.141, Measurement and Evaluation; 51.143, Methods and Materials of Teaching English; 90.253, Professional Development for Teachers.	Quarter 8
30.251, Shakespeare; 51.139, Writing and the Teaching of Writing; 51.126, Teaching of Reading in Secondary Schools; specified elective.	Quarter 9
Specified electives.	Quarter 10
Specified electives.	Quarter 11

## TEACHING OF GENERAL SCIENCE

11.171, Physics for Life Sciences I; 12.144, Organic Chemistry; 50.131, Human Development and Learning II; specified elective.	Quarter 4
11.172, Physics for Life Sciences II; specified electives.	Quarter 5
16.201, Physical Geology; 16.203, Physical Geology Laboratory; 51.135, Analysis of Teaching and Educational Process; specified electives.	Quarter 6
16.161, Observational Astronomy; specified electives.	Quarter 7
50.141, Measurement and Evaluation; 51.147, Methods and Materials of Teaching the Sciences; 90.253, Professional Development for Teachers; specified electives.	Quarter 8
Specified electives.	Quarter 9
Specified electives.	Quarter 10
Specified electives.	Quarter 11

## TEACHING OF MATHEMATICS

- Quarter 4** 10.184, Calculus and Linear Methods I; 10.211, Introduction to FORTRAN Programming I; 26.151, Symbolic Logic; 50.131, Human Development and Learning II.
- Quarter 5** 10.185, Calculus and Linear Methods II; 10.212, Introduction to FORTRAN Programming II; specified electives.
- Quarter 6** 51.135, Analysis of Teaching and Educational Process; specified electives.
- Quarter 7** Specified electives.
- Quarter 8** 50.141, Measurement and Evaluation; 51.145, Methods and Materials of Teaching Mathematics; 90.253, Professional Development for Teachers, specified electives.
- Quarter 9** 51.124, Modern Mathematics Curricula; specified electives.
- Quarter 10** Specified electives.
- Quarter 11** Specified electives.

## TEACHING OF MODERN LANGUAGES

- Quarter 4** 30.170, Survey of English Literature I; 50.131, Human Development and Learning II; specified electives.
- Quarter 5** Specified electives.
- Quarter 6** 51.135, Analysis of Teaching and Educational Process; specified electives.
- Quarter 7** Specified electives.
- Quarter 8** 50.141, Measurement and Evaluation; 51.140, Methods and Materials of Teaching Modern Languages I; 90.253, Professional Development for Teachers; specified electives.
- Quarter 9** 51.144, Methods and Materials of Teaching Modern Languages II; specified electives.
- Quarter 10** Specified electives.
- Quarter 11** Specified electives.

## TEACHING OF MUSIC

- Quarter 4** 28.270, Strings I; 28.132, Music Theory III; 50.121, Human Development I; specified elective.
- Quarter 5** 28.271, Strings II; \*28. , Music History or specified elective; 11.109, Physics in Music; 50.131, Human Development II.
- Quarter 6** 28.272, Woodwinds I; 28.278, Organization of Instrumental Programs; 51.135, Analysis of Teaching; specified elective.
- Quarter 7** 28.273, Woodwinds II; 28.277, Voice, 51.127, Teaching Music in Elementary Schools; specified elective.



28.274, Brass I; 51.128, Teaching Music in Secondary Schools I; 90.253, Professional Development; two specified electives.	<b>Quarter 8</b>
28.275, Brass II, 51.129, Teaching Music in Secondary Schools II; 50.141, Measurement and Evaluation; specified elective.	<b>Quarter 9</b>
28.276, Percussion; Education Humanities elective; two specified electives.	<b>Quarter 10</b>
Specified electives.	<b>Quarter 11</b>

**TEACHING OF PHYSICS**

10.184, Calculus and Linear Methods I; 11.127, Intermediate Mechanics; 11.147, Physics Laboratory; 50.131, Human Development and Learning II; specified elective.	<b>Quarter 4</b>
10.185, Calculus and Linear Methods II; 11.128, Electric and Magnetic Fields; 11.148, Physics Laboratory; specified electives.	<b>Quarter 5</b>
10.250, Analysis I or 10.221, Applied Analysis; 11.200, Classical Mechanics; 11.260, Wave Laboratory; 51.135, Analysis of Teaching and Educational Process.	<b>Quarter 6</b>
10.251, Analysis II or 10.221, Applied Analysis; specified electives.	<b>Quarter 7</b>
12.114, General Chemistry; 50.141, Measurement and Evaluation; 51.147, Methods and Materials of Teaching the Sciences; 90.253, Professional Development for Teachers; specified elective.	<b>Quarter 8</b>
12.115, General Chemistry; specified electives.	<b>Quarter 9</b>
Specified electives.	<b>Quarter 10</b>
Specified electives.	<b>Quarter 11</b>

**TEACHING OF  
SOCIAL STUDIES**

23.210, U.S. to 1877; 26.150, Introduction to Logic; 39.115, Principles and Problems of Economics; 50.131, Human Development and Learning II.	<b>Quarter 4</b>
23.211, U.S. since 1877; 39.116, Principles and Problems of Economics; specified electives.	<b>Quarter 5</b>
23.199, The Historian's Craft; 51.135, Analysis of Teaching and Educational Process; specified electives.	<b>Quarter 6</b>
39.280, Comparative Economics; specified electives.	<b>Quarter 7</b>
50.141, Measurement and Evaluation; 51.149, Methods and Materials of Teaching Social Studies; 90.253, Professional Development for Teachers.	<b>Quarter 8</b>

- Quarter 9** 51.126, Teaching Reading in Secondary Schools; specified electives.
- Quarter 10** Specified electives.
- Quarter 11** Specified electives.

## **SPEECH AND AUDIOLOGY**

- Quarter 4** 50.142, Introduction to Educational Statistics; 56.120, Introduction to Special Education; 55.123 Speech Science; 55.124, Anatomy of Auditory Mechanisms.
- Quarter 5** 50.121, Human Development and Learning I; 55.126, Anatomy of Vocal Mechanisms; 55.133, Developmental Phonology; specified elective.
- Quarter 6** 19.135, Personality I; 55.131, Developmental Semantics and Syntax; 55.142, Introduction to Audiology; specified elective.
- Quarter 7** 19.136, Personality II; 55.141, Phonemic Disorders; Educational Psychology elective; specified elective.
- Quarter 8** 51.133, Fundamentals of Reading I; 55.154, Fluency Disorders; 90.253, Professional Development for Teachers; specified electives.
- Quarter 9** 55.143, Diagnostic Techniques; 55.141, Orientation to Clinical Practices; specified electives.
- Quarter 10** 19.201, Abnormal Psychology; specified electives.
- Quarter 11** Specified electives.

## **HUMAN SERVICES**

- Quarter 4** 50.121, Human Development and Learning I; specified electives.
- Quarter 5** 50.131, Human Development and Learning II; 50.161, Seminar in Group Process; specified electives.
- Quarter 6** 19.135, Personality I; 92.160, Social Welfare Problems; 50.142, Introduction to Educational Statistics; 50.167, Education and Psychosocial Development.
- Quarter 7** 19.136, Personality II; 50.133, Educational Applications of Social Psychology; Organizational Behavior; specified elective.
- Quarter 8** 19.201, Abnormal Psychology; 92.166, Counseling Theory and Process; specified electives.
- Quarter 9** 56.150, Introduction to Rehabilitation; Community Planning; specified electives.
- Quarter 10** 56.951, Principles of Medical Rehabilitation; specified electives.
- Quarter 11** Specified electives.

## College of Engineering

### CHEMICAL ENGINEERING

#### CLASS of '81

4.101, Chemical Engineering Calculations I; 10.153, Calculus IV; 11.110, Engineering Physics Laboratory I; 11.206, Engineering Physics IV; 12.147, Organic Chemistry I. **Quarter 4**

4.102, Chemical Engineering Calculations II; 4.106, Polymer Science Engineering; 10.154, Calculus V; 11.111, Engineering Physics Laboratory II; 12.148, Organic Chemistry II. **Quarter 5**

#### CLASS OF '80

4.111, Chemical Engineering I; 10.155, Mathematical Analysis I; 12.161, Physical Chemistry I; 39.115, Economics I. **Quarter 6**

4.112, Chemical Engineering II; 10.156, Mathematical Analysis II; 12.162, Physical Chemistry II; 39.116, Economics II. **Quarter 7**

#### CLASS OF '79

4.121, Transport Phenomena I; 4.123, Experimental Methods I; 4.126, Chemical Engineering Thermodynamics; Social Science/Humanity elective. **Quarter 8**

4.122, Transport Phenomena I; 4.124, Experimental Methods II; 4.136, Chemical Engineering Kinetics; Social Science/Humanity elective. **Quarter 9**

#### CLASS OF '78

4.131, Process Design I or \*4.133, Projects I; \*two Chemical Engineering electives; Social Science/Humanity elective. **Quarter 10**

4.132, Process Design II or \*4.134, Projects II; \*two Chemical Engineering electives; Social Science/Humanity elective. **Quarter 11**

### CIVIL ENGINEERING

#### CLASS OF '81

1.116, Engineering Measurements and 1.117, Engineering Measurements Laboratory or 1.140, Structural Mechanics I; 10.153, Calculus IV; 11.110, Engineering Physics Laboratory I; 11.206, Engineering Physics IV; 39.115, Economics I. **Quarter 4**

1.116, Engineering Measurements and 1.117, Engineering Measurements Laboratory or 1.140, Structural Mechanics I; 2.130, Thermodynamics I; 10.154, Calculus V; 11.111, Engineering Physics Laboratory II; 39.116, Economics II. **Quarter 5**

**CLASS OF '80**

**Quarter 6** 1.141, Structural Mechanics II; 2.116, Dynamics; 10.115, Mathematical Analysis I; Social Science/Humanity elective.

**Quarter 7** 1.120, Fluid Mechanics I; 1.143, Structural Analysis I; 1.180, Materials; 10.156, Mathematical Analysis II; 29.113, Effective Speaking Workshop.

**CLASS OF '79**

**Quarter 8** 1.150, Concrete Design I or 1.178, Soil Mechanics and 1.179, Soil Mechanics Laboratory; 3.183, Electrical Engineering I; \*technical elective; Social Science/Humanity elective.

**Quarter 9** 1.150, Concrete Design I or 1.178, Soil Mechanics and 1.179, Soil Mechanics Laboratory; 1.193, Environmental Engineering I; \*technical elective; Social Science/Humanity elective.

**CLASS OF '78**

**Quarter 10** 1.160, Structural Design I; \*two technical electives; Social Science/Humanity elective.

**Quarter 11** \*Three technical electives; Social Science/Humanity elective.

## **ELECTRICAL ENGINEERING**

**CLASS OF '81**

**Quarter 4** 3.111, Circuits and Systems I; 3.151, E.E. Laboratory I-A; 10.153, Calculus IV; 11.110, Engineering Physics Laboratory I; 11.206, Engineering Physics IV; Social Science/Humanity elective.

**Quarter 5** 2.163, Mechanics for Electrical Engineers; 3.112, Circuits and Systems II; 3.152, E.E. Laboratory I-B; 10.154, Calculus V; 11.111, Engineering Physics Laboratory II; Social Science/Humanity elective.

**CLASS OF '80**

**Quarter 6** 2.130, Thermodynamics I; 3.101, Discrete Systems; 3.113, Circuits and Systems III; 3.153, E.E. Laboratory II-A; 10.155, Mathematical Analysis I.

**Quarter 7** 3.122, Circuits and Systems IV; 3.141, Electronics I; 3.154, E.E. Laboratory II-B; 10.156, Mathematical Analysis II; Social Science/Humanity elective.

**CLASS OF '79**

**Quarter 8** 2.199, Materials Science, 3.142, Electronics II; 3.155, E.E. Laboratory III-A; 3.161, Electromagnetic Field Theory I; Social Science/Humanity elective.

**Quarter 9** 3.144, Electronics III; 3.156, E.E. Laboratory III-B; 3.162, Electromagnetic Field Theory II; 3.191, Introduction to Digital Computers I; Social Science/Humanity elective.

**CLASS OF '78**

3.134, E.E. Laboratory IV; 3.175, Electromagnetic Dynamics; \*two technical electives; Social Science/Humanity elective. **Quarter 10**

\*Two or three technical electives; Social Science/Humanity elective. **Quarter 11**

\*Approved by Advisor.

**ELECTRICAL  
ENGINEERING  
Power Systems**

**CLASS OF '81**

3.111, Circuits and Systems I; 3.151, E.E. Laboratory I-A; 10.153, Calculus IV; 11.110, Engineering Physics Laboratory I; 11.206, Engineering Physics IV; Social Science/Humanity elective. **Quarter 4**

2.163, Mechanics for Electrical Engineers; 3.112, Circuits and Systems II; 3.152, E.E. Laboratory I-B; 10.154, Calculus V; 11.111, Engineering Physics Laboratory II; Social Science/Humanity elective. **Quarter 5**

**CLASS OF '80**

2.130, Thermodynamics I; 3.113, Circuits and Systems III; 3.153, E.E. Laboratory II-A; 10.155, Mathematical Analysis I; Social Science/Humanity elective. **Quarter 6**

3.122, Circuits and Systems IV; 3.141, Electronics I; 3.154, E.E. Laboratory II-B; 10.156, Mathematical Analysis II; Social Science/Humanity elective. **Quarter 7**

**CLASS OF '79**

2.131, Thermodynamics II; 3.142, Electronics II; 3.161, Electromagnetic Field Theory I; 3.221, Electrical Power Systems I; 3.245, Power Laboratory I-A. **Quarter 8**

3.162, Electromagnetic Field Theory II; 3.177, Electrical Machines; 3.222, Electrical Power Systems II; 3.246, Power Laboratory I-B; Social Science/Humanity elective. **Quarter 9**

**CLASS OF '78**

3.176, Machines and Systems; 3.178, Transients in Electrical Power Systems; 3.234, Power Laboratory II; 2.236, Nuclear Engineering; Social Science/Humanity elective. **Quarter 10**

3.101, Discrete Systems; 93.170, Energy and Public Policy; \*one technical elective; Social Science/Humanity elective. **Quarter 11**

\*Not required for graduation.

## ELECTRICAL ENGINEERING Computer Engineering

### CLASS OF '81

- Quarter 4** 3.111, Circuits and Systems I; 3.151, E.E. Laboratory I-A; 10.153, Calculus IV; 11.110, Engineering Physics Laboratory I; 11.206, Engineering Physics IV; Social Science/Humanity elective.
- Quarter 5** 2.163, Mechanics for Electrical Engineers; 3.112, Circuits and Systems II; 3.152, E.E. Laboratory I-B; 10.154, Calculus V; 11.111, Engineering Physics Laboratory II; Social Science/Humanity elective.

### CLASS OF '80

- Quarter 6** 2.130, Thermodynamics; 3.101, Discrete Systems; 3.113, Circuits and Systems III; 3.153, E.E. Laboratory II-A; 10.155, Mathematical Analysis I.
- Quarter 7** 3.122, Circuits and Systems IV; 3.141, Electronics I; 3.154, E.E. Laboratory II-B; 3.191, Introduction to Digital Computers I; Social Science/Humanity elective.

### CLASS OF '79

- Quarter 8** 3.142, Electronics II; 3.155, E.E. Laboratory III-A; 3.161, Electromagnetic Field Theory I; 3.192, Introduction to Digital Computers II; Social Science/Humanity elective.
- Quarter 9** 3.144, Electronics III; 3.156, E.E. Laboratory III-B; 3.162, Electromagnetic Field Theory II; 3.281, Machine and Assembly Language Programming; Social Science/Humanity elective.

### CLASS OF '78

- Quarter 10** 2.199, Materials Science; 3.134, E.E. Laboratory IV; \*two technical electives; Social Science/Humanity elective.
- Quarter 11** \*Two or three technical electives; Social Science/Humanity elective.

## GENERAL ENGINEERING

### CLASS OF '81

- Quarter 4** 10.153, Calculus IV; 11.110, Engineering Physics Laboratory I; 11.206, Engineering Physics IV; \*Engineering Science elective; Social Science/Humanity elective.
- Quarter 5** 10.154, Calculus V; 11.111, Engineering Physics Laboratory II; \*Engineering Science elective; \*Coordinated Study elective; Social Science/Humanity elective.

### CLASS OF '80

- Quarter 6** \*Engineering Science elective; \*two Coordinated Study electives; Social Science/Humanity elective.
- Quarter 7** \*Two Engineering Science electives; \*Coordinated Study elective; Social Science/Humanity elective.

**CLASS OF '79**

\*Two Engineering Science electives; \*two Coordinated Study electives. **Quarter 8**

\*Two Engineering Science electives; \*two Coordinated Study electives. **Quarter 9**

**CLASS OF '78**

\*Two Engineering Science electives; \*two Coordinated Study electives. **Quarter 10**

\*Two Engineering Science electives; \*two Coordinated Study electives. **Quarter 11**

**GENERAL  
ENGINEERING  
Computer Science Option**

**CLASS OF '81**

03.191, Introduction to Digital Computers I; 10.153, Calculus IV; 11.110, Engineering Physics Laboratory I; 11.206, Engineering Physics IV; Social Science/Humanity elective. **Quarter 4**

3.281, Assembly Language—Programming or 93.112, Assembly Language—Programming; 10.154, Calculus V; 11.111, Engineering Physics Laboratory II; \*Coordinated Study elective; Social Science/Humanity elective. **Quarter 5**

**CLASS OF '80**

\*Two Computer Science electives; \*Coordinated Study elective; Social Science/Humanity elective. **Quarter 6**

\*Two Computer Science electives; \*Coordinated Study elective; Social Science/Humanity elective. **Quarter 7**

**CLASS OF '79**

\*Computer Science elective; \*two Coordinated Study electives; Social Science/Humanity elective. **Quarter 8**

\*Computer Science elective; \*two Coordinated Study electives; Social Science/Humanity elective. **Quarter 9**

**INDUSTRIAL  
ENGINEERING**

**CLASS OF '81**

5.128, Work Design; 10.153, Calculus IV; 11.110, Engineering Physics Laboratory I; 11.206, Engineering Physics IV; 39.115, Economics I. **Quarter 4**

2.165, Mechanics I; 5.145, Probabilistic Analysis for Engineers; 10.154, Calculus V; 11.111, Engineering Physics Laboratory II; 39.116, Economics II. **Quarter 5**

**CLASS OF '80**

**Quarter 6** 3.183, Electrical Engineering I; 5.147, Statistics I; 5.201, Principles of Computation and Programming I; Math elective.

**Quarter 7** 5.148, Statistics II; 5.161, Operations Research I; \*Engineering Science elective; Social Science/Humanity elective.

**CLASS OF '79**

**Quarter 8** 5.150, Financial Cost Control; 5.163, Operations Research II; 29.102, Effective Speaking Workshop; \*technical elective; Behavioral Science elective.

**Quarter 9** 5.130, Systems I; \*Engineering Science elective; \*technical elective; Behavioral Science elective.

**CLASS OF '78**

**Quarter 10** 5.131, Systems II; 5.186, People in Organizations; \*technical elective; Social Science/Humanity elective.

**Quarter 11** 5.261, Engineering Economy and Decision Theory; \*technical elective; open elective; Social Science/Humanity elective.

## **MECHANICAL ENGINEERING**

**CLASS OF '81**

**Quarter 4** 2.165, Mechanics I; 10.153, Calculus IV; 11.110, Engineering Physics Laboratory I; 11.206, Engineering Physics IV; 39.115, Economics I.

**Quarter 5** 2.130, Thermodynamics I; 2.167, Mechanics II; 10.154, Calculus V; 11.111, Engineering Physics Laboratory II; Social Science/Humanity elective.

**CLASS OF '80**

**Quarter 6** 2.131, Thermodynamics II; 2.166, Mechanics III; 2.192, Measurement and Analysis; 10.155, Mathematical Analysis I.

**Quarter 7** 2.155, Fluid Mechanics I; 2.168, Mechanics IV; 2.196, Materials Science; 10.156, Mathematical Analysis II.

**CLASS OF '79**

**Quarter 8** \*Three electives; Social Science/Humanity elective.

**Quarter 9** 2.150, Heat Transfer; 2.176, Dynamics; \*elective; Social Science/Humanity elective.

**CLASS OF '78**

**Quarter 10** \*Three electives; Social Science/Humanity elective.

**Quarter 11** \*Three electives; Social Science/Humanity elective.



**MECHANICAL  
ENGINEERING—  
Five-Year B.S.-M.S.**

**CLASS OF '80**

2.131, Thermodynamics II; 2.166, Mechanics III; 2.192, Measurement and Analysis; 10.155, Mathematical Analysis I; Social Science/Humanity elective. **Quarter 6**

2.155, Fluid Mechanics I; 2.168, Mechanics IV; 2.196, Materials Science; 10.156, Mathematical Analysis II; Social Science/Humanity elective. **Quarter 7**

**CLASS OF '79**

2.826, Mathematical Methods for Mechanical Engineers I; \*three electives; \*graduate elective; Social Science/Humanity elective. **Quarter 8**

2.150, Heat Transfer I; 2.176, Dynamics; 2.827, Mathematical Methods for Mechanical Engineers II; \*one elective; \*graduate elective; Social Science/Humanity elective. **Quarter 9**

\*Graduate electives (8 Q.H.); \*electives (8 Q.H.); seminar. **Quarter 10A**

\*Graduate electives (8 Q.H.); \*electives (8 Q.H.); seminar. **Quarter 11S**

\*Graduate electives (4 Q.H.); \*electives (8 Q.H.); thesis. **Quarter 12**

**ENGINEERING  
TRANSFER PROGRAM**

**TRANSFER STUDENTS WITH  
ASSOCIATE DEGREE IN  
ENGINEERING TECHNOLOGY**

**CLASS OF '80**

All majors take: 9.104, Computer Programming; 10.140, Calculus for Transfer Students; 11.126, Physics Review; plus additional course(s) by major: CIVIL, 1.140, Structural Mechanics I; MECHANICAL, 2.130, Thermodynamics I; ELECTRICAL AND POWER SYSTEMS, 3.119, Circuits and Systems A. **Special Term Quarter 5T**

CIVIL, 1.141, Structural Mechanics II; 2.116, Dynamics, 2.130, Thermodynamics I; 10.155, Mathematical Analysis I; ELECTRICAL AND POWER SYSTEMS, 2.130, Thermodynamics I; 3.101, Discrete Systems; 3.120, Circuits and Systems B; 10.155, Mathematical Analysis I; MECHANICAL follows regular curriculum. **Special Term Quarter 6T**

ELECTRICAL, 2.163, Mechanics for Electrical Engineers; 3.122, Circuits and Systems IV; 3.141, Electronics I; 10.156, Mathematical Analysis II; POWER SYSTEMS, 2.131, Thermodynamics II; 3.122, Circuits and Systems IV; 3.141, Electronics I; 10.156, Mathematical Analysis II; CIVIL and MECHANICAL follow regular curriculum. **Special Term Quarter 7T**

\*Approved by Advisor

## Lincoln College

### B.E.T. ELECTRICAL

- Quarter 4** 10.421, Calculus A; 3.451, Circuit Analysis I; 11.420, Physics IV (Electromagnetic Field); liberal elective.
- Quarter 5** 3.424, Circuits Laboratory I; 3.440, Physical Electronics; 3.452, Circuit Analysis II; 10.422, Calculus B; liberal elective.
- Quarter 6** 3.411, Electronics I; 3.425, Circuits Laboratory II; 3.453, Circuits Analysis III; 3.460, Engineering Analysis; and 39.115, Principles of Economics.
- Quarter 7** 3.412, Electronics II; 3.423, Electronic Laboratory; 3.410, Electrical Measurements; 3.430, Energy Conversion; and 3.454, Circuits Analysis IV.
- Quarter 8** 3.470, Digital Computers I; 3.413, Electronics III; 3.427, Advanced Electronic Laboratory I; technical elective.
- Quarter 9** 3.477, Control Engineering; 3.428, Advanced Electronic Laboratory II; technical elective; liberal elective.
- Quarter 10** 3.478, Control Engineering II; 3.429, Advanced Electronic Laboratory III; technical elective; liberal elective.
- Quarter 11** 3.437, Distributed Systems; 3.461, Engineering Analysis II or 2.419, Mechanics; technical elective; liberal elective.

### B.E.T. MECHANICAL

- Quarter 4** 10.421, Calculus A; 2.411, Mechanics A; 9.464, Engineering Design Graphics IV; 2.431, Materials A.
- Quarter 5** 2.414, Stress Analysis A; 2.412, Mechanics B; 10.422, Calculus B; 2.461, Machine Shop or a liberal elective.
- Quarter 6** 2.415, Stress Analysis B; 2.421, Thermodynamics A; 2.462, Mechanical Technology Laboratory I; 2.413, Mechanics C; 39.115, Principles and Problems of Economics.
- Quarter 7** 2.422, Thermodynamics B; 2.465, Heat Technology Laboratory I; 2.441, Fluid Mechanics A; and 3.420, Electricity and Electronics I.
- Quarter 8** 2.417, Mechanical Design A; 2.463, Mechanical Laboratory II; 2.442, Fluid Mechanics B; technical elective; BA or Industrial elective.
- Quarter 9** 2.418, Mechanical Design B; 2.464, Mechanical Laboratory III; 2.423, Thermodynamics C; technical elective; liberal elective.
- Quarter 10** 4.481, Nuclear Technology; 2.466, Heat Laboratory; 2.424, Thermodynamics D; technical elective; liberal elective.
- Quarter 11** 2.467, Project Laboratory; two technical electives; liberal elective.

## College of Liberal Arts

The following models illustrate the kinds of curricula from which an upperclass student in the College of Liberal Arts may select his/her program. Since the College offers programs leading to two degrees in most majors—the Bachelor of Arts and the Bachelor of Science—students should discuss their academic needs and goals with counselors in the College to determine the program most appropriate for them.

Generally, the Bachelor of Science requires greater concentration in the major field of study. Requirements for the Bachelor of Arts degree include minimum “distribution requirements” (courses in the Humanities, Social Sciences, Science/Mathematics) and completion of a modern foreign language through the intermediate level.

Other programs available include an interdisciplinary major in Human Services which is described in the University *Bulletin* and an Independent Major, whereby a student may, with guidance, design his own major. Information about these and all other programs is available in the Dean's Office.

### COLLEGE OF LIBERAL ARTS JUNIOR-SENIOR HONORS PROGRAM

The junior-senior program provides an opportunity for honors work under the supervision of a faculty adviser during the last three quarters of the student's program. Individual departments design their own honors program. Such a program may call for participation in honors seminars, independent study, or a special research project culminating in an honors thesis.

Standards for eligibility in the honors program are:

Minimum average of 3.0 through the seventh quarter

No F's or I's

No C's or D's in major field

No D's in courses required for graduation outside of major field

With the approval of the major department and the Honors Committee, exceptions may be made.

During three of the four quarters preceding graduation, the honors participant must complete 12 quarter hours of honors work. No more than four quarter hours of honors work may be taken each term unless the Honors Committee grants special permission. Students must register in their departments for the appropriately numbered honors course for which they will receive a grade from their advisers at the end of each term. The Honors Committee and the student's major department will insist that the student's honors work remain consistently excellent. Should the work fall below standard, the program will be subject to review and possible termination.

Students are invited or may request to participate. Written application for this program is made on forms available in the LA office. This application is reviewed by the Honors Committee and approval is based on the merits of the individual proposal. For information regarding eligibility or completion of the application, a student should consult an adviser in the dean's office.

## **AFRICAN-AMERICAN STUDIES**

### **Bachelor of Arts**

25.250, 251, Foundations of Black Culture I and II; 25.100, 101, Science and Black Society I and II; 25.050, Educational Issues for Black Americans; 25.254, Black Community and Social Change; 25.210, Contemporary Problems in Black Society; 25.170, Economic Problems of Black Americans; 25.257, Field Seminar; 25.259, Directed Study for Senior Thesis; 23.241, African-American History; 30.267, African-American Literature I; 25.256, African Civilization I.

In addition, students must consult the department for recommended electives.

Foreign language and distribution requirements.

### **Bachelor of Science**

25.250, 251, Foundations of Black Culture I and II; 25.100, 101, Science and Black Society I and II; 25.050, Educational Issues for Black Americans; 25.254, Black Community and Social Change; 25.210, Contemporary Problems in Black Society; 25.170, Economic Problems of Black Americans; 25.257, Field Seminar; 25.259, Directed Study for Senior Thesis; 23.241, African-American History; 30.267, African-American Literature I; 25.256, African Civilization I; 25.263, African Civilization II.

In addition, students must select a "career package" of eight to ten specialized courses in consultation with and approval of a departmental faculty adviser.

## **ART HISTORY**

### **Bachelor of Arts**

27.118, 119, History of Art I and II; two Studio courses; ten Art History electives; two History electives; one Music elective; one Philosophy elective.

Foreign language and distribution requirements.

### **Bachelor of Science**

27.118, 119, History of Art I and II; two Studio courses; ten Art History electives; two History electives; one Music elective; one Philosophy elective.

## **BIOLOGY**

### **Bachelor of Arts**

18.131, General Biology; 18.132, Animal Biology; 18.133, Plant Biology; 18.134, Environmental and Population Biology; 18.135, Genetics and Developmental Biology; 18.136, Cell Physiology and Biochemistry (formerly Cell Biology); four Biology electives approved by departmental Advisory Committee.

Fundamentals of Mathematics or Calculus (one year); 11.171, 172, Physics for the Life Sciences I and II; 11.173, 174, Physics Laboratory for the Life Sciences I and II or 11.117, Physics for Science Majors I; 11.119, Physics for Science Majors III; 11.147, 149, Physics Laboratory for Science Majors I and III; 12.106, 107, General Chemistry I and II; 12.171, Analytical Chemistry; 12.144, 145, Organic Chemistry I and II.

Foreign language and distribution requirements.

18.131, General Biology; 18.132, Animal Biology; 18.133, Plant Biology; 18.134, Environmental and Population Biology; 18.135, Genetics and Developmental Biology; 18.136, Cell Physiology and Biochemistry (formerly Cell Biology); 18.280, Senior Seminar; four Biology electives approved by departmental Advisory Committee.

Calculus (one year); 11.117, 118, 119, Physics for Science Majors I, II, and III; 11.147 and 11.148 or 11.149; Physics Laboratory for Science Majors I and II or III; 12.106, 107, General Chemistry I and II; 12.171, Analytical Chemistry; 12.144, 145, Organic Chemistry I and II; two approved advanced Science electives.

Foreign language requirement.

## **Bachelor of Science**

## **CHEMISTRY**

12.103, 104, General Chemistry I and II; 12.110, The Chemical Elements; 12.105, Analytical Chemistry; 12.153, 154, 155, Organic Chemistry I, II, and III; 12.161, 162, 168, Physical Chemistry I, II, and III; 12.183, Principles of Experimental Chemistry; 12.179, Instrumental Analysis.

10.181, 182, 183, Calculus I, II, and III; 11.117, 118, 119, Physics for Science Majors I, II, and III; 11.148, 149, Physics Laboratory for Science Majors II and III.

Foreign language and distribution requirements.

## **Bachelor of Arts**

12.103, 104, General Chemistry I and II; 12.110, The Chemical Elements; 12.105, Analytical Chemistry; 12.153, 154, 155, Organic Chemistry I, II, and III; 12.161, 162, 168, Physical Chemistry I, II, and III; 12.183, Principles of Experimental Chemistry; 12.179, Instrumental Analysis; 12.213, Inorganic Chemistry; 12.253, Identification of Organic Compounds; two advanced Science or Mathematics electives; one advanced laboratory or research course.

10.181, 182, 183, Calculus I, II, and II; 10.207, Differential Equations; 11.117, 118, 119, Physics for Science Majors I, II, and III; 11.148, 149, Physics Laboratory for Science Majors II and III.

## **Bachelor of Science**

## DRAMA

### Bachelor of Arts

29.109, Speech for the Theatre; 29.110, Voice and Articulation; 29.150, Elementary Acting I; 29.160, Concepts of Direction; 29.170, Stagecraft; 29.200, 201, History of the Theatre I and II; Theatre Practicum; eight Drama electives.

Eight quarter-hours Psychology or four-quarter hours each Anthropology and Sociology.

Foreign language and distribution requirements.

In addition, the department recommends that a Physical Education skills course be elected each quarter.

### Bachelor of Science

29.109, Speech for the Theatre; 29.110, Voice and Articulation; 29.150, Elementary Acting I; 29.160, Concepts of Direction; 29.170, Stagecraft; 29.200, 201, History of the Theatre I and II; Theatre Practicum; eight Drama electives.

In addition, the department recommends that a Physical Education skills course be elected each quarter.

## ECONOMICS

### Bachelor of Arts

39.115, 116, Principles and Problems of Economics I and II; 39.250, 251, Statistics I and II; 39.255, Microeconomic Theory; 39.256, Macroeconomic Theory; six Economics electives.

10.104, 105, Fundamentals of Mathematics I and II; four Social Science electives other than Economics.

Foreign language and distribution requirements.

### Bachelor of Science

39.115, 116, Principles and Problems of Economics I and II; 39.250, 251, Statistics I and II; 39.255, Microeconomic Theory; 39.256, Macroeconomic Theory; 39.293, Introduction to Econometrics or 39.294, Problems in Economic Research; ten Economics electives.

10.104, 105, Fundamentals of Mathematics I and II; four Social Science electives other than Economics.

## ENGLISH

### Bachelor of Arts

30.110, Literary Analysis of Poetry; 30.120, Introduction to Linguistics or 30.121, Foundations of the English Language; 30.170, 171, Survey of English Literature I and II; two American Literature Courses\*; 30.222 or 223, Chaucer I or II or 30.218, Medieval Literature\*; 30.250 or 251, Shakespeare\*; 18th Century English Literature or Period Figure Course\*; 19th Century English Literature or Period Figure Course\*; one Seminar\*; two English electives; 23.130, 131, England to 1688 and England since 1688.

Foreign language and distribution requirements.

\*This Seminar may be substituted for a period or figure course thus adding one English elective.

30.110, Literary Analysis of Poetry; 30.120, Introduction to Linguistics or 30.121, Foundations of the English Language; 30.170, 171, Survey of English Literature I and II; two American Literature Courses\*; 30.222 or 223, Chaucer I or II or 30.218, Medieval Literature\*; 30.250 or 251, Shakespeare\*; 18th Century English Literature or Period Figure Course\*; 19th Century English Literature or Period Figure Course\*; one Seminar\*; four English electives; 23.130, 131, England to 1688 and England since 1688.

Distribution requirements as required for the Bachelor of Arts program.

\*The Seminar may be substituted for a period or figure course thus adding one English elective.

## **Bachelor of Science**

## **GEOLOGY**

16.201, Physical Geology; 16.203, Physical Geology Laboratory; 16.202, Historical Geology; 16.204, Historical Geology Laboratory; 16.211, Descriptive Mineralogy; 16.212, Optical Crystallography; 16.213, Optical Mineralogy; 16.271, Geology Seminar; six Geology electives.

## **Bachelor of Arts**

10.104, 105, Fundamentals of Mathematics I and II or 10.106, 107, Calculus I and II; 11.117, Physics for Science Majors I or 11.171, Physics for the Life Sciences I; 12.106, 107, General Chemistry I and II.

Foreign language and distribution requirements.

16.201, Physical Geology; 16.203, Physical Geology Laboratory; 16.202, Historical Geology; 16.204, Historical Geology Laboratory; 16.211, Descriptive Mineralogy; 16.212, Optical Crystallography; 16.213, Optical Mineralogy; 16.271, Geology Seminar; eight Geology electives.

## **Bachelor of Science**

10.105, 107, Calculus I and II or 10.150, 151, 152, Calculus I, II, and III; 11.117, 118, 119, Physics for Science Majors I, II, and III; 12.106, 107 or 12.103, 104, General Chemistry I and II; 12.105 or 12.171, Analytical Chemistry or 12.161, Physical Chemistry or 16.214, Geochemistry; two approved additional Science electives; six courses in the Humanities and/or Social Sciences.

## **HISTORY**

23.101, 102, Western Civilization I and II; 23.210, 211, United States to 1877, United States since 1877; 23.199, The Historian's Craft; ten History electives distributed according to departmental requirements.

## **Bachelor of Arts**

Foreign language and distribution requirements.

Recommended: courses in the related Social Sciences.

23.101, 102, Western Civilization I and II; 23.210, 211, United States to 1877, United States since 1877; 23.199, The Historian's Craft; 23.200, Social Science Methodology; 12 History electives distributed according to departmental requirements.

## **Bachelor of Science**

One course in Introductory Statistics (e.g., 19.120, 21.239, 39.250); 93.113, Computers for the Social Sciences; three of the following: 39.115, Principles of Economics, 21.100, Introduction to Sociology, 20.100, Principles of Social Anthropology, 22.110, Introduction to Politics, 19.105, Foundations of Psychology, 18.119, Environment and Man. (Substitutions only with approval of the chairman.)

## HUMAN SERVICES

### Bachelor of Arts

*Prerequisite Courses:* 19.105, 106, Foundations of Psychology I and II; 19.120, Statistics in Psychology or 21.239, Introduction to Sociological Statistical Analysis; 21.100, Introduction to Sociology; 22.111, Introduction to American Government; 39.116, Principles and Problems of Economics II; 50.166, Introduction to Human Service Professions; 50.167, Psychosocial Development.

*Core Courses:* 19.135, 136, 201, Personality I and II, Psychology of Abnormal Behavior or 19.135, 202, 203, Personality I and Abnormal Psychology I and II; 21.200, 201, Group Behavior- The Sociological Imagination or 29.107, Interpersonal Communication and 29.117, Group Discussion; ONE of these: 21.118, Population and Society; 21.145, Urban Society; 21.245, Community Analysis; 21.255, Sociology of Formal Organizations; 56.150, Introduction to Rehabilitation; 56.951, Medical Rehabilitation; 92.160, Social Welfare Problems; 92.166, Casework and Counseling or 53.804, Counseling.

Approved four-course concentration; two supervised field courses. Foreign Language and distribution requirements.

## INDEPENDENT MAJOR

A student who can demonstrate that none of the established majors listed offers preparation for his/her professional goal may petition for an Independent Major. Before filing a petition, the student must discuss the aims and ideas of the proposed major with a counselor in the Dean's Office who will help make course selections and assign a faculty adviser. Each proposal is considered on its individual merits by a special committee. No student may be considered an Independent Major until the proposal submitted has been approved by the committee.

## JOURNALISM

### Bachelor of Arts

38.101, 102, History and Principles of Journalism I and II; 38.103, 104, Fundamentals of Newswriting I and II; 38.105, 106, Techniques of Journalism I and II; 38.107, 108, Press and Society I and II.

23.210, 211, United States to 1877, United States since 1877; two History electives; 30.170, 171, Survey of English Literature I and II; two English electives; two Political Science electives; 39.115, 116, Principles and Problems of Economics I and II.

Foreign language and distribution requirements.



38.101, 102, History and Principles of Journalism I and II; 38.103, 104, Fundamentals of Newswriting I and II; 38.105, 106, Techniques of Journalism I and II; 38.107, 108, Press and Society I and II. 23.210, 211, United States to 1877, United States since 1877; 30.170, 171, Survey of English Literature I and II; two English electives; 39.115, 116, Principles and Problems of Economics I and II; six Mathematics and/or Science electives.

**Bachelor of Science**

**MATHEMATICS**

10.181, 182, 183, Calculus I, II, and III; 10.184, 185, Calculus and Linear Methods I and II; 10.186, 187, Differential Equations and Linear Methods I and II; four approved Mathematics electives selected in consultation with an adviser.

**Bachelor of Arts**

11.117, 118, 119, Physics for Science Majors I, II, and III.

Foreign language and distribution requirements.

**Bachelor of Science**

10.181, 182, 183, Calculus I, II, and III; 10.184, 185, Calculus and Linear Methods I and II; 10.186, 187, Differential Equations and Linear Methods I and II; seven approved Mathematics electives selected in consultation with an adviser.

11.117, 118, 119, Physics for Science Majors I, II, and III; two non-science courses.

**MODERN LANGUAGES**

Eight advanced\* electives in the major language, two advanced\* electives in the minor language.

**Bachelor of Arts**

30.170, 171, Survey of English Literature I and II; 23.101, 102, Western Civilization I and II; two additional History electives.

Distribution requirements.

**Bachelor of Science**

Twelve advanced\* electives in the major language including two conversation and composition courses; six advanced\* electives in the minor language including two conversation and composition courses.

23.101, 102, Western Civilization I and II.

**PHILOSOPHY**

26.110, Classic Greek Philosophers; 26.111, Modern Philosophy; 26.150, Introduction to Logic or 26.151, Symbolic Logic; 26.152, Theory of Knowledge or 26.153, Metaphysics or 26.155, Moral Philosophy; one Philosophy seminar; eight Philosophy electives.

**Bachelor of Arts**

Foreign language and distribution requirements.

**Bachelor of Science**

26.110, Classic Greek Philosophers; 26.111, Modern Philosophy; 26.150, Introduction to Logic or 26.151, Symbolic Logic; 26.152, Theory of Knowledge or 26.153, Metaphysics or 26.155, Moral Philosophy; one Philosophy seminar; eight Philosophy electives.

\*Courses beyond the intermediate level.

**Minor in Philosophy:** To qualify for a Minor in Philosophy, a student must take 28 credit hours in Philosophy. These will be distributed as follows:  
**INTRODUCTORY COURSES:** 26.101, Introduction to Philosophy I or 26.102, Introduction to Philosophy II or 26.105, Introduction to Scientific Method; **HISTORY OF PHILOSOPHY:** 26.110, Classical Greek Philosophy or 26.111, Modern Philosophy; **LOGIC REQUIREMENT:** 26.150, Introduction to Logic or 26.151, Symbolic Logic; **ELECTIVES:** Any four (4) courses in Philosophy of an advanced nature, i.e., any courses numbered over 26.110.

## PHYSICS

**Bachelor of Arts** 11.117, 118, and 119, Physics for Science Majors I, II, and III, and their associated laboratories 11.147, 148, and 149; 11.127, Intermediate Mechanics; 11.128, Electric and Magnetic fields; three upper-level Physics lecture courses; three upper-level Physics laboratory courses.

10.181, 182, and 183, Calculus I, II, and III; 10.184 and 185, Calculus and Linear Methods I and II; one advanced Mathematics elective.

Foreign language and distribution requirements.

**Bachelor of Science** 11.117, 118, 119, Physics for Science Majors I, II, and III, and their associated laboratories 11.147, 148, and 149; 11.127, Intermediate Mechanics; 11.128, Electric and Magnetic Fields; 11.208, Mathematical Physics; 11.220, Wave Motion and Optics; 11.230, Modern Physics; 11.200, Classical Mechanics; 11.211 and 11.212, Electricity and Magnetism I and II; three upper-level Physics laboratory courses.

10.181, 182, and 183, Calculus I, II, and III; 10.184 and 185, Calculus and Linear Methods I and II; two advanced Mathematics electives; five additional electives from those approved for majors in the following fields: Physics, Mathematics, Chemistry, Engineering, Biology, and Geology.

## POLITICAL SCIENCE

**Bachelor of Arts** 22.110, Introduction to Politics; 22.111, Introduction to American Government; 22.112, Introduction to International Relations; 22.113, Introduction to Foreign Governments and Societies (formerly titled Introduction to Comparative Politics); \*22.120, Conceptual Foundations of Contemporary Political Analysis; 22.261, Public Administration; one Political Theory/Thought course selected from the following: 22.270, 22.273, 22.274; five Political Science electives.

Six Social Science electives selected from at least three of the following areas: African-American Studies, Anthropology, Economics, History, Psychology, Sociology.

Foreign language and distribution requirements.

\*Replaces 22.280.

22.110, Introduction to Politics; 22.111, Introduction to American Government; 22.112, Introduction to International Relations; 22.113, Introduction to Foreign Governments and Societies (formerly titled Introduction to Comparative Politics); \*22.120, Conceptual Foundations of Contemporary Political Analysis; \*22.121, Research Methods I; \*22.122, Research Methods II; 22.261, Public Administration; and one Political Theory/Thought course selected from the following: 22.270, 22.273, 22.274; five Political Science electives.

**Bachelor of Science**

Six Social Science electives selected from at least three of the following areas: African-American Studies, Anthropology, Economics, History, Psychology, Sociology.

\*22.120, 121 and 122 replace 22.280, 281 and 286.

## **Concentration in Public Administration**

22.110, Introduction to Politics; 22.111, Introduction to American Government; \*22.120, Conceptual Foundations of Contemporary Political Analysis; \*\*22.121, Research Methods I; \*\*\*22.122, Research Methods II; 22.260, Public Policy Analysis; 22.261, Public Administration; 22.266, Public Personnel Administration; 22.267, Public Budgeting; and one Political Theory/Thought course selected from the following: 22.270, 22.273, 22.274; two Public Administration electives.

**Bachelor of Science**

Six Social Science electives selected from at least three of the following areas: African-American Studies, Anthropology, Economics, History, Psychology, Sociology.

## **PSYCHOLOGY**

*Core courses:* 19.105, 106, Foundations of Psychology I and II (usually freshman); 19.120, 121, Statistics in Behavioral Science I and II (sophomore/middler); 19.149, Sensation and Perception I (freshman/sophomore); 19.164, Learning and Motivation (freshman/sophomore); 19.178, Physiological Basis of Psychology I (sophomore); 19.135, Personality I (middler); 19.155, Psychology of Language (middler).

**Bachelor of Arts**

At least three of the following laboratory courses: 19.160, Experimental Design; 19.165, Learning Laboratory; 19.162, Sensation and Perception Laboratory; 19.181, Laboratory in Physiological Psychology; 19.195, Laboratory in Psycholinguistics; 19.138, Experimental Personality; one Advanced Teaching Practicum; or Directed Study.

\*Replaces 22.280.

\*\*Replaces 22.281.

\*\*\*New degree requirement for students entering or transferring into Northeastern in Fall 1975 or later.

At least four Psychology electives (a total of no more than two teaching practica will be accepted to meet departmental elective requirements).

At least one Psychology seminar.

Psychology in Western Civilization, 23.102.

Foreign language and distribution requirements.

#### **Bachelor of Science**

*Core courses:* 19.105, 106, Foundations of Psychology I and II (usually freshman); 19.120, 121, Statistics in Behavioral Science I and II (sophomore/middler); 19.149, Sensation and Perception I (freshman/sophomore); 19.164, Learning and Motivation (freshman/sophomore); 19.178, Physiological Basis of Psychology I (sophomore); 19.135, Personality I (middler); 19.155, Psychology of Language (middler).

At least four of the following laboratory courses: 19.160, Experimental Design; 19.165, Learning Laboratory; 19.162, Sensation and Perception Laboratory; 19.181, Laboratory in Physiological Psychology; 19.195, Laboratory in Psycholinguistics; 19.138, Experimental Personality; one Advanced Teaching Practicum; or Directed Study.

At least eight Psychology electives (a total of no more than four teaching practica will be accepted to meet departmental elective requirements).

At least one Psychology seminar.

11.176, 177, Physics for Psychology I and II; four additional courses in Mathematics, Physics, Biology, or Chemistry.

#### **Minors in Psychology**

The department also offers approved minors in Psychology. For more information call the Psychology department at 457-3793.

## **SOCIOLOGY- ANTHROPOLOGY Concentration in Sociology**

#### **Bachelor of Arts**

*Preparatory Requirements:* 21.100, Introduction to Sociology and 20.100, Introduction to Anthropology. *Core Requirements:* 21.239, Introduction to Statistical Analysis; 21.240, 241, Research Methods I and II; 21.280, Classical Social Thought 21.281, Current Social Thought; 21.270, Class, Power and Social Change (preferably in senior year). *Elective Requirements:* two intermediate courses (100 level); two advanced courses (200 level); one anthropology course beyond 20.100.

Six electives in the Social Sciences other than Sociology-Anthropology.

Foreign language and distribution requirements.

*Preparatory Requirements:* 21.100, Introduction to Sociology and 20.100, Introduction to Anthropology. *Core Requirements:* 21.239, Introduction to Statistical Analysis; 21.240, 241, Research Methods I and II; 21.280, Classical Social Thought; 21.281, Current Social Thought; 21.270, Class, Power and Social Change (preferably in senior year). *Elective Requirements:* two intermediate courses (100 level); two advanced courses (200 level); one anthropology course beyond 20.100.

Six electives in the Social Sciences other than Sociology-Anthropology.

Approved six-course specialization.

**Bachelor of Science**

**Concentration in Anthropology**

*Preparatory Requirements:* 20.100, Introduction to Anthropology 21.100, Introduction to Sociology. *Core Requirements:* at least three of the following: 20.130, Language and Culture; 20.135, Individual and Culture; 20.240, Human Origins; 20.160, Sex, Sex Roles and Family; 20.170, Culture in Transition; 20.210, Tribal Society and Cultures; 20.214, Peasant Society and Culture; 20.257, Myth and Religion. *Elective Requirements:* at least six additional anthropology courses; one sociology elective.

Six electives in the Social Sciences other than Sociology-Anthropology.

Foreign language and distribution requirements.

**Bachelor of Arts**

*Preparatory Requirements:* 20.100, Introduction to Anthropology 21.100, Introduction to Sociology. *Core Requirements:* at least three of the following: 20.130, Language and Culture; 20.135, Individual and Culture; 20.240, Human Origins; 20.160, Sex, Sex Roles and Family; 20.170, Culture in Transition; 20.210, Tribal Society and Cultures; 20.214, Peasant Society and Culture; 20.257, Myth and Religion. *Elective Requirements:* at least six additional anthropology courses; one sociology elective.

Six electives in the Social Sciences other than Sociology-Anthropology.

Approved-five course specialization.

**Bachelor of Science**

**SPEECH COMMUNICATIONS**  
**Group and Public Communication Concentration**

29.105, Argumentation and Debate; 29.106, Speech Fundamentals; 29.123, Propaganda; 29.119, Explorations in Communication; 29.129, Introduction to Communication Skills; 29.115, Theories of Persuasion; 29.116, Persuasive Techniques; 29.141, Interpersonal Communications; 29.117, Group Discussion; seven Speech electives.

**Bachelor of Arts**

22.101, Introduction to Political Science I or 22.102, Introduction to Political Science II; 19.106, Foundations of Psychology II or 21.100, Introduction to Sociology; 19.130, Social Psychology.

Foreign language and distribution requirements.

**Bachelor of Science**

29.119, Explorations in Communication; 29.129, Introduction to Communication Skills; 29.115, Theories of Persuasion; 29.116, Persuasive Techniques; 29.141, Interpersonal Communications; 29.117, Group Discussion; six electives to be chosen from the following: 29.127, The Mass and The Media; 29.105, Argumentation and Debate; 29.108, Business and Professional Speaking; 29.128, Contemporary Public Address; 29.110, Voice and Articulation; 29.111, Oral Interpretation; 29.112, Advanced Vocal Techniques; 29.112, Advanced Vocal Techniques; 29.114, Advanced Oral Interpretation; 29.140, Consultation Skills; 30.120, Introduction to Linguistics; 30.130, Introduction to Semantics; 26.150, Introduction to Logic.

\*Two Social Science courses (beyond the introductory level). Liberal Arts distribution requirements.

\*Selected courses, based upon the value to the student's goals. Advisor approval necessary.

## **Personal Performance Concentration**

**Bachelor of Arts**

29.106, Speech Fundamentals; 29.110, Voice and Articulation; 29.129, Introduction to Communication Skills or 29.119, Explorations in Communication; 29.111, Oral Interpretation; 29.108, Business and Professional Speaking; 29.105, Argumentation and Debate; 29.112, Advanced Oral Techniques or 29.114, Advanced Oral Interpretation; 29.118, Communications in Education or 29.115, Theories of Persuasion; 29.116, Persuasive Techniques or Reader's Theatre; 29.290, Directed Study in Speech Communications; Speech elective.

Foreign language and distribution requirements.

**Bachelor of Science**

29.119, Explorations in Communication; 29.129, Introduction to Communication Skills; 29.110, Voice and Articulation; 29.111, Oral Interpretation; 29.118, Communications in Education or 29.115, Theories of Persuasion; 29.116, Persuasive Techniques or Readers' Theatre; 29.290, Directed Study in Speech; six electives to be selected from the following: 29.141, Interpersonal Communications; 29.127, The Mass and the Media; 29.105, Argumentation and Debate; 29.108, Business and Professional Speaking; 29.128, Contemporary Public Address; 29.117, Group Discussion; 29.112, Advanced Vocal Techniques; 29.114, Advanced Oral Interpretation; 29.140, Consultation Skills; 30.120, Introduction to Linguistics; 30.130, Introduction to Semantics; 26.150, Introduction to Logic.

Liberal Arts distribution requirements.

At least four courses selected in consultation with major adviser and approved by the Speech Curriculum Committee on the basis of the value of the selected courses to the student's proposed goals. B.S. candidates must complete 29.290, Directed Study in Speech.

## College of Nursing

### ASSOCIATE DEGREE PROGRAM

19.201, Psychology of Abnormal Behavior; 21.100, Introduction to Sociology; 81.101, Medical-Surgical Nursing or 82.101, Maternal and Child Health. **Quarter 4**

19.201, Psychology of Abnormal Behavior; 21.100, Introduction to Sociology; 81.101, Medical-Surgical Nursing or 82.101, Maternal and Child Health. **Quarter 5**

30.114, Introduction to Literature; 90.254, Professional Development for Nurses; 81.102, Medical-Surgical Nursing or 83.110, Psychiatric Nursing; elective. **Quarter 6**

22.177, American Political Process; 81.102, Medical-Surgical Nursing or 83.110, Psychiatric Nursing; elective. **Quarter 7**

### ASSOCIATE DEGREE PROGRAM FOR LICENSED PRACTICAL NURSES

21.100, Introduction to Sociology; 22.177, American Political Process or elective; 81.102, Medical-Surgical Nursing or 82.101, Maternal and Child Health or 83.101, Psychiatric Nursing. **Quarter 4**

30.114, Introduction to Literature; 90.254, Professional Development for Nurses; History or an elective; 81.102, Medical-Surgical Nursing or 82.101, Maternal and Child Health or 83.110, Psychiatric Nursing. **Quarter 5**

81.102, Medical-Surgical Nursing or 82.101, Maternal and Child Health; elective, or 83.110, Psychiatric Nursing. **Quarter 6**

### BACHELOR'S DEGREE PROGRAM

18.120, Basic Microbiology; 18.143, Human Physiology; 19.105, Foundations of Psychology I; 80.204, Nursing - Universal Needs. **Quarter 4**

18.144, Human Physiology; 19.106, Foundations of Psychology II; 20.100, Principles of Social Anthropology; 80.205, Nursing - Common Problems I. **Quarter 5**

19.141, Growth and Development I; 21.100, Introduction to Sociology; 73.116, Pharmacodynamics; 80.207, Nursing - Common Problems II. **Quarter 6**

- Quarter 7** 19.130, Social Psychology or 21.107, Social Psychology; 19.142, Growth and Development II; 81.201, Medical-Surgical Nursing or 82.201, Maternal and Child Nursing or 83.201, Psychiatric-Mental Health Nursing.
- Quarter 8** 81.201, Medical-Surgical Nursing or 82.201, Maternal and Child Nursing or 83.201, Psychiatric-Mental Health Nursing; Humanities elective; elective.
- Quarter 9** 81.201, Medical-Surgical Nursing or 82.201, Maternal and Child Nursing or 83.201, Psychiatric-Mental Health Nursing; Humanities elective; elective.
- Quarter 10** 84.201, Public Health Nursing; two electives.
- Quarter 11** 85.201, Contemporary Nursing; elective.



**College of  
Pharmacy  
and  
Allied Health  
Professions**

**PHARMACY**

12.144, Organic Chemistry; 11.171, Physics for the Life Sciences I; 73.202, Anatomy-Physiology; Liberal Arts electives.	<b>Quarter 4</b>
12.145, Organic Chemistry; 11.175, Physics for the Life Sciences III; 73.202, Anatomy-Physiology; Liberal Arts electives.	<b>Quarter 5</b>
71.261, Physical Pharmacy; 73.202, Anatomy-Physiology; 93.151, General Biochemistry; Liberal Arts elective.	<b>Quarter 6</b>
18.120, Basic Microbiology; 71.262, Pharmaceutics I; 72.270, Medicinal Chemistry/Pharmacology I; 73.204, Anatomy-Physiology.	<b>Quarter 7</b>
72.230, Drug Analysis; 72.271, Medicinal Chemistry/Pharmacology II; 73.223, Clinical Biochemistry; Liberal Arts elective.	<b>Quarter 7A</b>
71.263, Pharmaceutics II, 73.229, Pharmacology Laboratory I; 73.245, Introduction to Pathology; 72.272, Medicinal Chemistry/Pharmacology III; professional elective.	<b>Quarter 8</b>
71.251, Introduction to Clinical Pharmacy; 71.264, Biopharmaceutics/Pharmacokinetics; 72.273, Medicinal Chemistry/Pharmacology IV; 73.230, Pharmacology Laboratory II; 73.247, Toxicology.	<b>Quarter 9</b>
71.254, Clinical Pharmacy.	<b>Quarter 10S (Voluntary Quarter)</b>
65.218, Public Health; 71.243, Pharmacy Jurisprudence; 71.254, Clinical Pharmacy; 71.283, Professional Practice I; 71.284, Professional Practice I/Laboratory; 90.251, Placement Techniques; professional elective.	<b>Quarter 10</b>
65.218, Public Health; 71.243, Pharmacy Jurisprudence; 71.245, Pharmacy Administration; 71.254, Clinical Pharmacy; 71.284, Professional Practice I/Laboratory; 71.286, Professional Practice II/Laboratory; 71.288, Professional Practice II; 90.251, Placement Techniques; professional electives.	<b>Quarter 10A</b>

**FORSYTH DENTAL -  
ASSOCIATE DEGREE  
PROGRAM**

30.113, Freshman Writing.	<b>Quarter 4</b>
30.114, Introduction to Literature.	<b>Quarter 4A</b>
21.100, Introduction to Sociology; 19.105, Foundations of Psychology I.	<b>Quarter 5</b>

## MEDICAL LABORATORY SCIENCE

- Quarter 4** Group I take 12.144, Organic Chemistry; 18.143, Human Physiology I; 87.154, Basic MLS Microbiology; elective.  
Group II take 12.171, Analytical Chemistry; 87.152, Basic MLS Hematology; 87.153, Basic MLS Immunohematology; Social Science elective; Humanities elective.
- Quarter 4A** Group I take 12.171, Analytical Chemistry; 87.152, Basic MLS Hematology; 87.153, Basic MLS Immunohematology; Social Science elective; Humanities elective.  
Group II take 12.144, Organic Chemistry; 18.143, Human Physiology I; 87.154, Basic MLS Microbiology; elective.
- Quarter 5** All take 12.145, Organic Chemistry; 18.144, Human Physiology II; 87.155, Basic MLS Chemistry; elective.
- Quarter 6** All take 18.135, Genetics and Development Biology; 11.171, Physics for the Life Sciences I; 87.106, MLS Instrumentation I; 87.250, Communications in the Health Sciences; elective.
- Quarter 7** All take 11.172, Physics for the Life Sciences II; 18.221, Introduction to Microbiology; 18.136, Cell Physiology and Biochemistry; elective.
- Quarter 8** Group I take 87.252, Hematology and 87.253, Immunohematology; 87.164, Applied Study Microbiology *or* 87.162, Applied Study Hematology and 87.163, Applied Study Immunohematology *or* 87.165, Applied Study Clinical Chemistry; 87.203, Medical Immunology and Serology *or* 87.204, Medical Parasitology.  
Group II take 87.255, Clinical Chemistry; 87.164, Applied Study Microbiology *or* 87.162, Applied Study Hematology and 87.163, Applied Study Immunohematology *or* 87.165, Applied Study Clinical Chemistry; 87.204, Medical Parasitology *or* 87.203, Medical Immunology and Serology.
- Quarter 9** 87.254, Clinical Microbiology; 87.164, Applied Study Microbiology *or* 87.162, Applied Study Hematology and 87.163, Applied Study Immunohematology *or* 87.165, Applied Study Clinical Chemistry; 87.280, Special Topics.
- Quarter 10** Group I take 87.255, Clinical Chemistry; 87.164, Applied Study Microbiology *or* 87.162, Applied Study Hematology and 87.163, Applied Study Immunohematology, *or* 87.165, Applied Study Clinical Chemistry; 87.204, Medical Parasitology *or* 87.203, Medical Immunology and Serology.  
Group II take 87.252, Hematology and 87.253, Immunohematology; 87.164, Applied Study Microbiology *or* 87.162, Applied Study Hematology and 87.163, Applied Study Immunohematology *or* 87.165, Applied Study Clinical Chemistry; 87.203, Medical Immunology and Serology *or* 87.204, Medical Parasitology.
- Quarter 11** 87.221, MLS Management; 87.226, Health Science Education; 87.107, Laboratory Instrumentation; Biology elective; 87.281, MLS Senior Seminar; elective.

**MEDICAL RECORD  
ADMINISTRATION**

39.115, Principles and Problems of Economics I or 23.101, Western Civilization I; 45.209, Organization Behavior I; Humanities or Science elective; 18.114, Functional Human Anatomy I.	<b>Quarter 4</b>
39.116, Principles and Problems of Economics II or 39.130, Medical Economics or 23.102, Western Civilization II; 18.115, Functional Human Anatomy II; 18.121, Introductory Microbiology; 45.210, Organization Behavior II.	<b>Quarter 5</b>
86.112, Foundations of Medical Science I; 86.107, Medical Terminology; 86.151, Medical Record Science I; 86.102, Hospital Law; 21.100, Introduction to Sociology.	<b>Quarter 6</b>
86.152, Medical Record Science II; 86.113, Foundations of Medical Science II; 86.162, Principles of Management and Hospital Administration; 73.111, Drug Uses and Actions.	<b>Quarter 7</b>
86.153, Medical Record Science III; 86.262, Applied Medical Records Directed Practice I; 86.164, Special Topics I; 86.165, Special Topics II; 86.173, Clinical Seminar; 86.163, Systems Analysis Health Oriented or 05.127, Work Design.	<b>Quarter 8</b>
86.154, Medical Record Science IV; 86.166, Applied Health Statistics; 86.257, Organization and Management of Medical Record Department I; 29.108, Business and Professional Speaking; 86.164, Special Topics I; 86.165, Special Topics II.	<b>Quarter 9</b>
86.258, Organization and Management of Medical Record Department II; 86.161, Quality Assurance; 86.263, Applied Medical Record Science Directed Practice II; 86.264, Applied Medical Record Science III; 86.164, Special Topics I; 86.165, Special Topics II.	<b>Quarter 10</b>
86.168, Medical Computer Application; elective; 86.157, Seminar in Medical Records; 87.226, Health Science Education; 86.169, Independent Study; 86.164, Special Topics I; 86.165, Special Topics II.	<b>Quarter 11</b>

**RESPIRATORY  
THERAPY**

73.202, Anatomy and Physiology; 86.226, Cardio-Pulmonary Physiology; 86.221, Introduction to Patient Care; 86.201, Professional Practice Laboratory I; Psychology or Sociology elective.	<b>Quarter 4</b>
73.204, Anatomy and Physiology; 86.227, Cardio-Pulmonary Disease; 73.117, Pharmacology for the Respiratory Care Practitioner; 86.222, Introduction to Respiratory Care; 86.202, Professional Practice Laboratory II.	<b>Quarter 4A</b>

86.209, Clinical Practice I; 86.223, Respiratory Care for Medical and Surgical Patients; 86.203, Professional Practice Laboratory III; 86.214, Clinical Seminar I; Speech or Communication elective, Liberal Arts elective.	<b>Quarter 5</b>
86.210, Clinical Practice II; 86.224, Respiratory Care for the Critical Patient; 86.204, Professional Practice Laboratory IV; 86.215, Clinical Seminar II; 86.112, Foundations of Medical Science I; 86.102, Hospital and Law Ethics.	<b>Quarter 6</b>
86.225, Cardio-Pulmonary Laboratory Technology; 86.205, Cardio-Pulmonary Laboratory Practice; 86.170, Health, Disease and Disability; 87.109, Foundation of Clinical Laboratory; Liberal Arts elective.	<b>Quarter 7</b>

## Deleted and Amended Courses

The following courses which appear in the 1976-1977 guide have been deleted or amended by another course for the 1977-1978 academic year. Please check the current curriculum guide (1977-1978) or departmental course requirement listings for additional information.

02.156	30.124	62.18V
02.164	30.130	62.19G
02.172	30.143	62.24C
02.174	30.149	62.24T
02.175	30.164	63.112
02.195	30.186	65.149
02.233	30.204	65.207
03.174	30.210	86.162
05.169	30.219	87.111
05.190	30.220	87.112
05.267	30.224	87.115
09.106	30.225	87.120
09.107	30.230	87.131
09.114	30.231	87.201
09.115	30.240	87.202
10.121	30.267	87.205
10.211	30.268	91.102
11.108	30.269	91.103
11.109	30.270	91.115
11.139	30.271	91.118
11.141	30.276	91.121
11.142	31.219	91.123
11.281	39.266	91.125
19.169	39.273	91.138
19.170	39.289	92.142
19.183	62.10C	
19.187	62.10P	
19.188	62.15A	
19.192	62.16N	
19.194	62.18T	

## Title Changes

These are the new title changes for the following courses:

- 02.166 **Mechanics III**
- 02.167 **Mechanics II**
- 03.251 **Communication Theory I**
- 62.18G **Beginning Women's Lacrosse**
- 62.18H **Intermediate Women's Lacrosse**
- 62.18J **Beginning Men's Lacrosse**
- 62.18K **Intermediate Men's Lacrosse**
- 62.24V **PAC Lacrosse**
- 63.13Q **Beginning Men's Apparatus**
- 63.13R **Beginning Women's Appartus**
- 71.261 **Physical Pharmacy**
- 71.262 **Pharmaceutics I**
- 71.263 **Pharmaceutics II**
- 71.264 **Biopharmaceutics/Pharmacokinetics**
- 87.252 **Hematology**
- 87.254 **Clinical Microbiology**
- 90.251 **Placement Techniques**
- 90.253 **Professional Development for Teachers**
- 90.254 **Professional Development of Nurses**
- 90.255 **Professional Development in Criminal Justice**
- 90.258 **Professional Development for Engineers**
- 91.104 **American Military History**
- 91.112 **Military Leadership**
- 91.114 **Military Terms**
- 91.116 **Military Law**
- 91.119 **Written Communications**
- 91.124 **World Balance**
- 91.201 **Air Force Today I**
- 91.202 **Leadership Laboratory**
- 91.203 **Air Force Today II**
- 91.204 **Leadership Laboratory**
- 91.205 **Development of Air Power I**
- 91.206 **Leadership Laboratory**
- 91.207 **Development of Air Power II**
- 91.208 **Leadership Laboratory**
- 91.209 **National Security Forces I**
- 91.210 **Leadership Laboratory**
- 91.211 **National Security Forces II**

- 91.212 Leadership Laboratory
- 91.213 Air Force Management and Leadership I
- 91.214 Leadership Laboratory
- 91.215 Air Force Management and Leadership II
- 91.216 Leadership Laboratory
- 91.218 Leadership Laboratory
- 91.220 Leadership Laboratory
- 91.222 Leadership Laboratory
- 91.224 Leadership Laboratory
- 91.226 Leadership Laboratory

## Course Numbering Program

The number to the left of the decimal point indicates the academic department offering the course. The three digits after the decimal point differentiate the courses within the department.

Accounting	41.	Health Education	65.
African-American Studies	25.	History	23.
Allied Health Professions	86.-87.	Industrial Engineering	05.
Anthropology	20.	Interdisciplinary	93.
Art	27.	International Business	46.
Biology	18.	Italian	35.
Business General	49.	Journalism	38.
Chemical Engineering	04.	Latin	36.
Chemistry	12.	Management	45.
Civil Engineering	01.	Marketing	43.
Cooperative	90.	Mathematics	10.
Criminal Justice	92.	Mechanical Engineering	02.
Drama, Speech, and Communications	29.	Military Science	91.
Earth Sciences (Geology)	16.	Music	28.
Economics	39.	Nursing	80.-85.
Education Foundation	50.	Pharmacy	71.-73.
Education Curriculum and Instruction	51.	Philosophy and Religion	26.
Education Speech and Hearing	55.	Physical Education	60.-62.
Education Rehabilitation	56.	Physical Therapy	64.
Electrical Engineering	03.	Physics	11.
English	30.	Political Science	22.
Finance and Insurance	44.	Psychology	19.
French	31.	Recreation	63.
German	33.	Russian	34.
Graphic Science	09.	Sociology	21.
		Spanish	32.
		Transportation	48.

Classes at Northeastern University are scheduled in different modules.

In assessing quarter weights for courses, the following statement applies:

*One quarter-hour of credit is equal to 50 minutes of instruction per week, plus two hours of preparation.*

## Mechanical Engineering

### 02.419 Mechanics

(Prereq. 10.320, 11.317) 4 Q.H.

Kinematics of particles: rectilinear and curvilinear motion of dynamic particles. Force, mass and acceleration, work and energy. Impulse and momentum of particles. Kinematics and dynamics of rigid bodies: force, mass, and acceleration. Dynamics of rigid bodies: work and energy, impulse and momentum.

## Electrical Engineering

### 03.245 E.E. Power Laboratory

1 Q.H.\*

\*Including lab



**03.252 Fundamentals of Communication Systems**

(Prereq. 03.251) 4 Q.H.

Frequency modulation, signal-to-noise ratios in AM and FM, multiplexing, sampling theory, pulse modulation systems, data transmission, signal space. Correlation detection, probability, random variables and random processes, information theory and coding.

## **Chemical Engineering**

**04.481 Nuclear Technology**

(Prereq. 10.422, 11.319) 4 Q.H.

Atomic and nuclear structure; discovery and nature of radioactivity. Nuclear reactions and energy; induced nuclear transformations, neutron properties; applications of radio nuclides. Radiological safety—nuclear instrumentation for particle detection, monitoring, and experimentation. The fission process and its applications; nuclear reactors—their classification design and application; nuclear fuel processing; radioactive waste disposal. Supplementary laboratory experiments.

## **Graphic Science**

**09.108 Computers for Engineers**

4 Q.H.

Introduction to use of computers in the solution of engineering problems; FORTRAN programming language. A survey of the organization and functioning of an elementary digital computer; the basic elements of the FORTRAN language; the use of flowcharts in the development of program logic; the establishment and manipulation of tables, arrays, and matrices in memory; the use of subprograms and subroutine packages; and graphical output on an X-Y plotter.

**09.109 Engineering Graphics and Design**

4 Q.H.

The orthographic system as a means of depicting three-dimensional objects and concepts on a two-dimensional medium. Progression from principal views to auxiliary views and sections. Reading and interpreting detail and assembly drawings and depiction by means of pictorial drawings and sketches. Fundamentals of manufacturing processes and dimensions and their interrelationship. Elements of design and student involvement by evaluation of existing design, components and systems. The student as the creative designer-engineer.

## **Mathematics**

**10.130 Introduction to Computers and Computations**

4 Q.H.

Introduction to problem-solving with the use of computers—computer programming as an "art." Work writing, debugging, and discussion of solutions to a series of problems. No previous computer experience required, but students should possess a serious interest in working with computers.

**10.131 Introduction to Computer Science**

(Prereq. 10.130 or 93.110 or 93.125 or equiv.) 4 Q.H.

A second course in programming, teaching problem-solving in the context of computing. Correctness, clarity, and reliability of programs are stressed.

**10.149 Pre-Calculus**

4 Q.H.

Preparation for Calculus 10.150, including pertinent topics from pre-college algebra and trigonometry.

**10.210 Introduction to Discrete Structures**

(Prereq. knowledge of any program lang.) 4 Q.H.

Review of set algebra, including mappings and relations. Algebraic structures including semigroups and groups. Elements of the theory of directed and undirected graphs, Boolean algebra, and propositional logic. Applications of these structures to various areas of computer science. Introduction to those fundamental algebraic, logical, and combinatorial concepts from mathematics needed in subsequent computer science courses.

**10.227 Functions of a Complex Variable II**

(Prereq. 10.226) 4 Q.H.

Continuation of 10.226.

## Chemistry

**12.277, 12.278, 12.279 Undergraduate Research**

(each) 4 Q.H.

Original experimental work under the direction of a staff member. Participation may begin in the middle year and will normally continue through the senior year. Approval of the administering committee is required.

**12.295, 12.296, 12.297, 12.298 Junior-Senior Honors Program**

(each) 4 Q.H.

For prerequisites and other details, see the section on the Junior-Senior Honors Program on page

## Biology

**18.138 Advanced Placement General Biology**

4 Q.H.\*

Covers same general principles of biology as 18.131, but the lecture and laboratory use examples from the world of microorganisms. Microorganisms (bacteria, fungi, algae) provide favorable experimental material to be used as model systems for the study of general biological problems originally identified in larger organisms.

**18.243 Medical Microbiology (*Non-Biology Majors only*)**

(Prereq. 18.220 or permission) 3 Q.H.

Host/parasite interactions—virulence, toxins, natural flora, immunological responses, characteristics of the common bacterial, rickettsial and protozoal infections in men. Epidemiology, pathology, vaccines and chemotherapy. Not open to biology majors.

**18.260 Advanced Cell Biology**

(Prereq. 18.136, Physics) 4 Q.H.\*

Selected topics in cellular structure and function of eukaryotes; e.g., their electrical and mechanical characteristics and the physical and biochemical processes underlying them.

## Psychology

**19.201 Abnormal Psychology**

(Prereq. 19.140) 4 Q.H.

Study of the symptomatology, etiology, dynamics, and therapy of the abnormal personality. The basic varieties of neurosis and psychosis. Somatic therapies as well as fundamental varieties of psychotherapy.

\*Including lab.

**19.204 American Sign Language III: Principles & Practice of Interpreting**

(Prereq. 19.196, 19.199 or permission) 4 Q.H.

Introduction to theories and principles of interpreting. Covers communication model, definitions, ethics, client-interpreter relationships, mechanics, and special considerations for different interpreting settings such as platform, classroom, one-to-one, mental health, vocational rehabilitation, religious, medical, and legal. Role playing is used to explore appropriate behavior for interpreters. Intensive laboratory work in simultaneous interpreting (English to ASL), translating (transliterating English to Sign English), and reverse (Sign to Spoken English).

**19.270, 19.271, 19.272, 19.273, 19.274, 19.275 Seminar**

4 Q.H.

Topics vary from term to term. For specific information, call ext. 3793.

## **Sociology**

**21.122 Introduction to Women's Studies: Image, Myth and Reality**

4 Q.H.

A first-level course serving as an introduction to the study of women in society. Familiarizes the student with the historical, political, economic, and social processes which have created both the image and reality of woman in contemporary society. An overview of the many different disciplinary approaches to the study of women.

**21.125 The Sociology of Private and Public Assistance**

4 Q.H.

Analysis of the functions of private and public assistance efforts in societies. The socio-political, economic, and psychological factors in public welfare and the helping professions.

**21.142 Sociology of Alcoholism**

4 Q.H.

Examination of the prevailing social definition of drinking in American society—the conditions under which people learn to drink, conditions contributing to the development of the "abnormal" drinker. Exploration of the factors which cause an individual to be labeled as an alcoholic by himself and by others. The role of social control agencies in the labeling and rehabilitation of alcoholics. Special attention to criminal justice responses to overdrinking, Alcoholics Anonymous, halfway houses, and detoxification centers.

**21.146 Suburb and Metropolis**

(Prereq. 21.100 or equiv.) 4 Q.H.

Ecology of suburban and metropolitan growth, impact on center city and rural fringe, emergent life styles and institutional forms. Compares interdependence, issues of identity, autonomy, and accessibility. Analysis of different types of metropolitan political, social, and economic institutions. Prospects for regional action.

**21.154 Sociology of Mental Health**

(Prereq. 21.100 or equiv.) 4 Q.H.

A survey of sociological perspectives on mental health and mental disorder. Discussion, readings, and presentation explore the social history of mental illness, epidemiology, cross cultural perspectives, parents' careers, the social institutions of treatment, and policy implications. Areas of convergence between sociological concepts and psychiatry are examined.

**21.157 Sociology of Human Service Organizations**

4 Q.H.

An examination of the special problems of organizations dealing with people in any of the following capacities: healing, rehabilitation, education, guidance, maintenance, or imprisonment. Governmental, charitable, and profit-making agencies are studied. Topics include bureaucracy and red tape, the role of the professional in an organization, leadership strategies, dealing with clients, and developing referral procedures. Open to students interested in human services, health care, sociology, and organizational behavior.

**21.159 Aging and Society**

4 Q.H.

A survey of issues and questions on aging, with special attention to social and economic consequences of the aging process, including retirement and productivity, health care problems, nursing home residences, widowhood, and the approach of death. Examples of aging in other cultures are presented in a search for new answers to social problems of aging in the U.S. Students learn to anticipate, cope with, and even prevent problems of aging that concern self, family, and clients/patients.

**21.161 Social Class and Communication**

(Prereq. 21.100 or consent) 4 Q.H.

Analysis of the ways in which groups and institutions, in both their ritual and everyday activities, communicate the idea of hierarchy and an individual's place in it, through face-to-face interaction, formal communication, and the use of space and time. A dramaturgical approach to social organization with special emphasis on status images in the media and the communication of social place by service organizations and professional groups. Includes some content analysis and observational fieldwork.

**21.165 Industrialism and Industrial Man**

4 Q.H.

**21.170 Sociological Perspectives on Consumerism and Consumer Behavior**

(replaces 21.167)

4 Q.H.

Analysis of consumer-oriented issues, including interest groups, needs, values, institutional networks, decision-making process, and situational impacts. Exploration of systemic benefits and costs of consumer-relevant actions.

**21.180 Sociology of Religion**

(Prereq. 21.100) 4 Q.H.

A comparative and analytic treatment of religion as a social institution, focusing on the relationships between religious organizations and other social institutions, with particular emphasis on the American experience. Religion as an agent of social change and stability is included.

**21.185 Sociology of the Arts**

(Prereq. 21.100) 4 Q.H.

An examination of the relationship between the social organization of society and the forms of art produced—the social role of the artist, how the arts are “manufactured” and distributed, the artistic consumer and his/her relationship to the art/artist, social support for the arts. Deals with a variety of art forms, emphasizing the performing arts.

**21.221 Seminar in Social Welfare**

4 Q.H.

Discussion of problems in social welfare observed in the term between “Problems” and “Practicum.” A research paper, based on directed field work in the intervening term, is the major course requirement.

## History

**23.110 History of European Morality**

4 Q.H.

The norms of European public and private morality and the extent of adherence to these standards from ancient to modern times.

**23.138 Irish Civilization**

4 Q.H.

A study of the Irish Question in British politics from the Act of Union to the establishment of the Free State, with special emphasis on Ireland as an underdeveloped country.

**23.139 History of Modern Italy (Group B)**

4 Q.H.

A survey of the social, economic, and political development of the modern Italian state from the seventeenth century to the present. Emphasis on the problem of modernization.

**23.146 Contemporary Middle East**

4 Q.H.

Political, economic, and social developments in the Middle East since the end of World War II.

**23.149 Imperialism**

4 Q.H.

The rise and fall of the European colonial empires with an emphasis on the period of the late eighteenth to the twentieth centuries. Attention to theories underlying imperial expansion and the impact of imperialism on colonies and colonizers.

**23.158 History of Islam**

4 Q.H.

The historical developments, major ideas, institutions, and cultural achievements of the Islamic world from the time of Muhammed through the seventeenth century.

**23.161 History of Psychology**

4 Q.H.

The evaluation of modern psychology in the light of its historical origins. Designed especially for psychology majors who are preparing for graduate school admissions and/or civil service examinations, both of which emphasize familiarity with historical issues, the work of major contributors to psychology, and the methods, data, and theoretical systems they developed. Psychology majors can receive elective credit in psychology for this course.

**23.166 The Creative Matrix (Group D)**

4 Q.H.

An analysis of the culture of the West in the nineteenth and twentieth centuries, focusing on the conjunction of social, cultural, and psychological forces that encouraged or retarded creativity. Explores the interconnections among the arts, social sciences, and sciences within each of the periods covered.

**23.173 China Since 1850**

4 Q.H.

The history of China from the Opium War to the present, with emphasis on the concepts and policies of the Communist regime since 1949. Not open to students who expect to receive credit for 23.170 and/or 23.171.

**23.174 Japan Since 1850**

4 Q.H.

The history of Japan since its opening by the West. Emphasis on westernization, the rise of Japan as a world power, and the Japanese experience since the defeat in World War II. Not open to students who expect to receive credit for 23.170 and 23.171.

**23.178 History of Disease and Health Care (Group A or B)**

4 Q.H.

A survey of medical theories from ancient times to the present, emphasizing concepts of disease causation and the health care systems or institutions derived from them. Medical theory and practice is related to both the general history of the period and the particular political, economic, or social circumstances which influenced attitudes regarding health care.

**23.180 History of Deviance in Western Europe**

4 Q.H.

An examination of individual and group behavior which was contrary to the accepted standards of the establishment (either in real or imagined ways) from the fifth through the

seventh centuries. The kinds of deviance explored include heretical ideas, witchcraft, incest, promiscuity, burglary, theft, infanticide, homicide, lunacy, and riots. Explores societal attitudes toward deviant behavior and the kinds of law enforcement mechanisms (official and unofficial) employed.

### **23.185 Revolutions**

4 Q.H.

A review of the important theories of revolution and an analysis of the major early modern and modern revolutions, with a view to evolving a working theory of both political and generational revolutions for the twentieth century.

### **23.206 History of American Science**

4 Q.H.

The contributions of American scientists to the fields of chemistry, physics, biology, geology, and psychology from colonial times to the present. Attention to the relationships between science, society, and government.

### **23.214 History of Sport in America (Group C)**

4 Q.H.

A history of the major sports and their impact on American life.

### **23.226 Governing Nineteenth-Century America**

4 Q.H.

Analysis of patterns of governing, with attention to public policy, the electorate, political parties and interest groups in the context of social and economic change in the nineteenth century.

### **23.227 Governing Twentieth-Century America (Group C)**

4 Q.H.

Analysis of the growth of government, with attention to public policy, the electorate, political parties, pressure groups, and federalism in relation to social and economic change in the twentieth century.

### **23.237 Topics in American Social History**

4 Q.H.

Selected topics in the social history of the American people since 1800.

### **23.238 History of American Engineering**

4 Q.H.

The history of technological innovation in America. Attention to the origin and structure of the American engineering profession and the roots of selected modern technical issues in the areas of energy, pollution control, and communications.

### **23.246 The Industrial Transformation of New England (Group C)**

4 Q.H.

The process by which New England evolved from an agricultural society into an industrial one and the reaction to the movement of industry away from the area. Field trips to historical industrial sites are planned.

### **23.247 History of Media in America**

4 Q.H.

Mass communication in American history, with special attention to the role of newspapers, magazines, books, films, radio, and television.

### **23.256 American Labor History**

4 Q.H.

A history of working people in America, with attention to the development of organized labor.

**23.262 Environmental History of the United States (Group C)**

4 Q.H.

American attitudes and practices toward natural and man-made environments from the first exploration of America to the present. Attention to literature, art, and landscape design.

**23.265 The Automobile in America (Group C)**

4 Q.H.

The impact of the automobile on American society in a historical context. Inquiry into the abandonment of traditional prohibitions of motorized carriages and examination of the use of planning, taxes, and highway policies to foster the use of the automobile. The effect of the car on land use, recreation, and the economy. Contemporary issues such as pollution and energy.

**23.269 City, Country, and Suburb: The History of American Life Styles (Group C)**

4 Q.H.

The residential patterns of Americans throughout their history, with attention to the impact of lifestyle on the culture of the nation.

## Philosophy

**26.116 Eighteenth-Century Philosophy**

(Prereq. 26.110 and 26.111 or consent of instructor) 4 Q.H.

Analysis of selected works of 18th-Century Enlightenment philosophy. Voltaire, Montesquieu, Rousseau, the Encyclopedists, Burke, Jefferson, Franklin, and Paine are representative.

**26.124 Philosophy of Psychology**

(Prereq. 4 Q.H. philosophy or 4 Q.H. psychology or consent of instructor) 4 Q.H.

An examination of the philosophical and scientific foundations of behavioristic psychology, with emphasis on the acquisition and use of language. Discussion of some alternative conceptions, e.g., Chomsky's and those arising from computer studies.

**26.136 Existentialism and Literature**

4 Q.H.

An examination of existentialism and the literature of "extreme situations" it inspired. The themes discussed include man alone, facing alienation, boredom, social pressures, conformity, absurdity, loneliness, unhappiness, frustration, contingency, chance, risk, anxiety, economic-social-political-psychological crises, nothingness, death, mass murder, annihilation.

**26.138 Philosophical Foundations of Freudian Psychoanalysis, Behavioristic & Existential Psychology**

4 Q.H.

A review of the three most influential trends in contemporary psychology, examining the major concepts, especially conflicting views on man. The following are discussed: Freudianism—sexuality, libido, ego, super-ego, id, unconscious, pleasure principle, reality principle, therapy; Behaviorism—Skinner's *Beyond Freedom & Dignity*; Existentialist Psychology—anxiety, loneliness, emptiness, alienation, boredom, love, hate, desire, sexuality, divided self, courage, existential psychoanalysis and therapy.

**26.139 Topics in the Philosophy of Logic 1971-72, 1972-73**

4 Q.H.

The philosophy of logic considered through various problem topics. Topics may include: the significance of differing notational systems, primacy of first-order logics, ontological presuppositions of logics, relation between logic and language, and the significance of formalism, etc.

**26.158 Social Ethics**

4 Q.H.

An introductory review of a large spectrum of trends in social ethics, both in the USA and on the international scene, and a brief historical survey. Includes contemporary issues such as abortion, euthanasia, death penalty, sexual equality and integrity, discrimination, pornography, violence, economic and social justice, population control, responsibility, freedom, and becoming.

**26.168 Moral Problems of Medicine**

4 Q.H.

Examines in depth a few of the most perplexing moral issues raised in contemporary medical practice: abortion, euthanasia, informed consent, and labeling and care for the retarded. Discussions of actual cases focus attention on core issues faced by those in the health care field. Lectures and extensive discussions.

**26.172 Revivalism, Utopianism & the American Republic**

4 Q.H.

Investigates basic religious themes in American culture. Dominant theme is the notion that America is (or should be) the "Promised Land." Studies attempts to make America into a promised land or to convert its people to true religiosity (revivalism) or to separate from the "false Christians" and form a "pure" community (utopianism). "Righteousness" as a pervasive American trait is investigated in two historical forms: religious fervor on the eve of the Civil War and the various kinds of fervor that arose in the confusion of the late 1960s.

**26.179 An Introduction to Islam**

4 Q.H.

Introduction to contemporary Islam through a study of its origins with Muhammad, its growth, and its present variety and influence in the Near East, Africa, India, Pakistan, and Turkey. The relations of Muslims to Jews, Christians, and Hindus, and the Muslim view of history are especially important issues. Muslim ideas of Scripture (Koran), salvation, and ethics are discussed.

**26.183 Being Religious**

4 Q.H.

Seeks to identify and appraise different ways of approaching religion: studies five different religious ways of life—the ways of sorcery, dogma, zen, individuation, and revitalization cults. Emphasis is placed upon appreciating the unique standpoint that each "way of being religious" requires and how each sees the world in a radically different way. Each has its own distinct idea of reality, truth, goodness, and happiness.

**26.190 Honors Program**

4 Q.H.

**26.200 Philosophy of History**

(Prereq. 4 Q.H. or consent) 4 Q.H.

The nature and problem of historical explanation and the function of value judgments and myth in such explanation. Discussion of the Christian, Marxist, and Idealistic interpretations of history.

**26.201 Area course: Mind & Language**

(Prereq. 4 Q.H. of philosophy or consent of instructor) 4 Q.H.

Contemporary challenges to mind-body dualism by linguistic philosophers with emphasis upon their analyses of such concepts as intelligence, consciousness, will, and rationality. Recent views concerning the effects of language on thought, perception, and world views are also discussed.



## French

### 31.217 French Literature in Translation

4 Q.H.

An elective course for all students, offering a study of some of the most significant works of French literature in translation. The topic will vary from year to year. Language majors would receive credit for this course *only* by making special arrangements with the instructor for extra work to be done. Topic for Spring term, 1978: French Existentialism.

### 31.232 Masterpieces of French Literature II (replaces 31.132)

(Prereq. 31.204) 4 Q.H.

Introductory course in French literature. Selected works from the 19th and 20th centuries.

### 31.280 Seminar: Critical Methodology and Practice in French Literature

(Prereq. excellent reading knowledge of French) 4 Q.H.

The seminar treats one modern French writer in terms of a critical methodology developed in the first part of the seminar. This methodology is based on modern critical practice and trains the student to think about and apply concepts of criticism. Fall 1978 topic: Camus.

### 31.281 Seminar: Trends in Modern French Literature

(Prereq. excellent reading knowledge of French) 4 Q.H.

The seminar examines a trend in modern French literature and develops a critical methodology useful for this analysis. Fall 1977 topic: The Crisis of the Modern French Novel.

## German

### 33.229 German Composition & Conversation III

(Prereq. completion of intermediate level of German) 4 Q.H.

Designed to improve students' skills in speaking and writing German. Weekly compositions in German, classroom discussions in German on magazine and newspaper articles and selections from current German authors. Aural comprehension and vocabulary building provided through presentation of German films. Formal grammar practice included.

## Russian

### 34.233 Stylistics and Advanced Grammar Analysis I

(Prereq. instructor's permission or 34.227 and 34.228) 4 Q.H.\*

Designed for students pursuing a major or minor in the Russian language. Weekly compositions and oral reports on specific themes dealing with Russian culture are required. Writing skills and stylistics are also emphasized. Periodic work in the language lab is also required.

### 34.234 Stylistics and Advanced Grammar Analysis II

(Prereq. instructor's permission or 34.227, 34.228) 4 Q.H.\*

Continuation of 34.233, with increased emphasis on writing skills.

## Journalism

### 38.112 Magazine Writing

(Prereq. 38.104) 4 Q.H.

Writing and free-lancing magazine articles. Analyzing magazines as markets. Selecting the best feature format—how-to-do-it, profile, personal experience, human interest or celebrity interview, success story, interpretive or investigative pieces, and others. Publishing a picture booklet as a class project.

twenties, the sound era and the Hollywood studio system, Italian neo-realism, and the current international movement. Lab fee required.

### **27.163 The American Film**

4 Q.H.

A study of the unique rise of the American film industry and its contribution to a burgeoning new international art form. Key films from D.W. Griffith's *Birth of a Nation* to Stanley Kubrick's *2001* will be screened and discussed weekly, along with lectures developing the American film's historical context and significance. Lab fee required.

### **27.194 Life Drawing**

4 Q.H.

A basic studio course in the study of the human figure. Drawings utilizing the model explore anatomy, technique, and style.

## **Music**

### **28.241 Piano Class II: Personalized System of Instruction II**

4 Q.H.

## **Drama and Speech**

### **29.141 Interpersonal Communications I**

4 Q.H.

A conceptual, theoretical course designed to increase awareness of the communication process. An examination of the ways in which we relate to other individuals and factors which influence these processes.

### **29.142 Interpersonal Communications II**

(Prereq. 29.141 or permission) 4 Q.H.

Application of concepts developed in Interpersonal Communications I. An experiential course, exploring ways of becoming more aware of one's self and one's relationships with others. An examination of various options for communicating and increasing knowledge of the group process. Enrollment limited.

### **29.213 Sexuality in the Drama**

4 Q.H.

An examination of sexuality, homosexuality, deviant social behavior, and the trends toward and away from pornography in selected plays from the Greeks to the contemporary theatre. Literary, critical, theatrical, and historical analysis.

### **29.281 Introduction to Communication Research**

4 Q.H.

An exploration of central role of communication in all aspects of modern life, supplementing the traditionally humanistic investigative tools with the tools of the social sciences. An introduction to scientific method and epistemology as it relates to the investigation of human communication phenomena. Prepares the student to find and critically consume research literature dealing with factors which influence the effectiveness of communication and which may be pertinent to either academic projects or to managerial decision making in the real world.

## **English**

### **30.205 Writing for the Professions: Business Administration**

(Prereq. 30.113, 30.114) 4 Q.H.

Designed to serve the professional writing needs of students in the College of Business Administration through instruction in practical business writings: letters, memorandums, case studies, and business reports.

**26.251 Intermediate Logic**

(Prereq. 26.151 Symbolic Logic) 4 Q.H.

Results in the theories of computation and the metamathematics of logical systems. Alternative explications of the notion of an algorithm. Proofs of completeness and decidability results for logic and first-order number theory. Limits on problems that can be solved by algorithm.

**26.256 Seminar: Moral Philosophy**

(Prereq. 26.155, 26.156 or consent of instructor) 4 Q.H.

An intensive examination of some meta-ethical problems associated with contemporary utilitarianism, such as the possibility of a non-cognitive utilitarianism, universalizability, and ethical argument. Normative problems such as social justice, human rights, and punishment.

**26.265 Seminar in Wittgenstein**

(Prereq. 8 Q.H. philosophy or consent) 4 Q.H.

The overall development of Wittgenstein's thought, with special emphasis upon his later work as presented in the *Philosophical Investigations*. Subjects of importance include: language and thought, meaning, philosophical psychology, knowledge and experience, the nature of philosophy.

**26.266 Seminar in John Dewey**

(Prereq. 8 Q.H. of philosophy or consent of instructor) 4 Q.H.

**26.267 Seminar in Nietzsche**

(Prereq. 8 Q.H. of philosophy or consent of instructor) 4 Q.H.

**26.268 Seminar in Russell**

(Prereq. 8 Q.H. of philosophy or consent) 4 Q.H.

Russell's thought, with emphasis on his views concerning knowledge, language, mind, and matter. His influence on contemporary thought. Attention to his social and political writings.

**26.273 Religion & Culture of Asia**

(Prereq. 26.180 or consent of instructor) 4 Q.H.

A study of selected themes drawn from the religious, philosophical, and literary resources of India, China, and Japan. Choice of one topic out of themes such as: "The Gods of the Hindus," "Interpretation of the Vedas and Upanishads," "The World of I-Ching," "The Enlightenment of the Buddha," "Confucius and Lao Tzu," and "The Way of Zen."

**26.280 Religion and Literature**

(Prereq. 26.180 or 26.181 and basic acquaintance with contemporary literature) 4 Q.H.

Some of the common themes of religion and literature with a view to clarify their possible relations and to assess the effects they seem to have upon each other. Selected readings from the works of Dostoevsky, Camus, Kafka, Stevens, and others, along with critical reflections on specific themes from Heidegger, Northrop Frye, Nathan Scott, and Stanley Hopper, among others.

## Art

**27.129 Photo Silkscreen**

4 Q.H.

Creative use of the photo silkscreen process, developing ideas visually through a combination of photography and hand-cut stencils. Emphasis on organizing relationships between the forms in order to effectively communicate the idea. No previous knowledge of photography or silkscreen necessary.

**27.130 History of Film**

4 Q.H.

An historical survey of the development of film art. The hand-colored silent films of Georges Melies in nineteenth-century France, the Russian montage and German expressionism of the

## Economics

### 39.278 Income Inequities and Discrimination

4 Q.H.

Dimensions of poverty in America; the economics of race and racism; analysis of other contributors to income and wealth inequities: age, education, and sex discrimination; domestic and world poverty.

### 39.279 Employment and Training Programs and Policies

4 Q.H.

Sequel to the Economics of Poverty and Discrimination; assessment of government and private efforts to fight poverty and improve the labor market position of impoverished groups; relationship between causes of poverty and discrimination, and possible remedies. Manpower training programs, negative income tax, family allowances, and other income maintenance schemes.

## Finance and Insurance

### 44.147 Karl Marx for Undergraduates

(Prereq. 39.106) 4 Q.H.

An introduction to the social, economic, and political systems (supposedly constructed in conformity with Marxist doctrine) that currently govern one-third of the world's population. Exploration of the success of the new social system in solving the fundamental problems of man and humanity: freedom, social justice of equity, stability with peace, and an opportunity to earn a decent living. An examination of the discrepancy between Marxist theory and its application, and an evaluation of Marxism judged in the historical perspective. Comparison of Marxist society with democratic society.

## Physical Education

### 62.16R Beginning Racquetball

1 Q.H.\*

Development of knowledge and skills necessary for competent performance in racquetball at the beginning level.

### 62.24Y Analysis and Coaching of Volleyball (Men-Women)

(Prereq. 62.17J) 2 Q.H.\*

The basic techniques and responsibilities of coaching intramural, interscholastic, and intercollegiate volleyball including advanced skill analysis, position and team play, conditioning, practice organization, and team management.

### 62.248 Clinical Athletic Training

(Prereq. 62.256) 2 Q.H.\*

The student athletic trainer acquires an introduction to clinical experience with an opportunity to practice the various skills for evaluation and treatment of the injured athlete.

### 62.259 Laboratory in Exercise Testing and Prescription

(Prereq. 62.254) 4 Q.H.\*

Practicum in assessment of physical work capacity, cardiac function, muscular strength, muscular endurance, flexibility, and body composition; prescription of exercise programs used to improve the aforementioned parameters; volunteer work as an exercise test technician and exercise leader in a fitness class.

## Recreation Education

### 63.264 Program Evaluation in Recreation

4 Q.H.

Comprehensive systems for evaluating program effectiveness as they relate to the consumer of recreation services. Major emphasis placed on developing an evaluation system for an

agency of the student's choice. Case studies are drawn from the public, non-profit, and commercial sectors.

**63.268 Urban Recreation**

4 Q.H.

An examination of the different cultural and sociological patterns of various ethnic groups who live in an urban setting. Various recreational activities are suggested for each group. Other pertinent recreational issues common to the urban community are studied.

## **School and Community Health Education**

**65.131 Current Health Issues**

4 Q.H.

Focus on personal health issues including mental health, human sexuality and reproduction, drug use and abuse, nutrition, communicable and chronic diseases, consumer health, and environmental concerns. Emphasis is placed on issues of concern to the students.

**65.221 Community Health**

4 Q.H.

Focus on today's major community health problems, with an overview of the organization of services for meeting community health needs at the local, state, federal, and international levels.

**65.224 Human Sexuality**

4 Q.H.

An analysis of the development of sexual gender identity—its genetic, hormonal, and environmental influences. An appraisal of expected sexual behaviors, life styles, attitudes and their variations. Abortion, homosexuality, birth planning, venereal disease, sexual problems, and sexual trends.

## **Pharmacy**

**71.213 Selected Topics in Clinical Pharmacy I**

(Prereq. 73.245, 72.270-73.230, permission of instructors) 4 Q.H.

Designed to increase the student's knowledge of selected disease entities. Pathophysiology and diagnosis of the illness as well as drug therapy and its interrelationship to patient compliance and education. Provides greater depth than existing clinical pharmacy courses.

**71.214 Selected Topics in Clinical Pharmacy II**

(Prereq. 73.245 pharmacology sequence through 73.230, permission of instructor) 4 Q.H.

Designed to increase the student's knowledge of selected disease entities. Pathophysiology and diagnosis of the illness as well as drug therapy and its interrelationship to patient compliance and education. Provides greater depth than existing clinical pharmacy courses.

**71.251 Clinical Pharmacy**

(Prereq. 65.218, 72.244) 3 Q.H.

Initial course in clinical pharmacy. Students learn to gather and evaluate medication data of patients, interpret clinical laboratory data, and study potential drug interactions of clinical significance.

**71.254 Clinical Pharmacy**

(Prereq. 71.251 Clinical Pharmacy or equiv.) 14 Q.H.\*

Learning to observe patient response to medication and evaluate and advise on all factors which may modify efficacy, safety, and economy of therapy. Lectures are devoted to case study evaluations and reports. Laboratory consists of five days of medical work rounds in the hospitals as well as case discussion orientation in various medical specialties.

\*Including lab.

**71.259 Basic Pharmacy** (replaces 71.260)

An introduction to the general scope of pharmacy. An introduction to calculations, basic tools, and equipment used in the practice of pharmacy. The student is also introduced to various drug products, parapharmaceuticals, and medical terminology.

**71.261 Physical Pharmacy** (Prereq. Org. Chem. 12.145 Basic Physics 11.172) 4 Q.H.\*

The study of physico-chemical theories and principles and their application to pharmaceutical systems: intermolecular forces of the various states of matter, solubility phenomena, equilibria, complexation, micromeritics, micro- and macromolecular systems, rheology, stability and chemical kinetics.

**71.262 Pharmaceutics I** (Prereq. Physical Pharmacy 71.261) 4 Q.H.\*

The application of fundamental principles to the formulation of pharmaceutical preparations. Major emphasis includes a discussion of pharmaceutical dosage forms including both industrial formulation and extemporaneous compounding.

**71.263 Pharmaceutics II** (Prereq. Pharmaceutics I 71.262) 4 Q.H.\*

A continuation of Pharmaceutics I.

**71.264 Biopharmaceutics/Pharmacokinetics**

(Prereq. Pharmaceutics II 71.263, Biochemistry 93.151, Physiology 73.204) 4 Q.H. Introduction to biopharmaceutics and pharmacokinetics. Emphasis on the kinetics of drug absorption, distribution metabolism, and excretion in respect to dosage forms, drug interactions, and therapeutic response. Mathematical models for these processes are developed and applied to bioavailability data and the evaluation of drug therapy.

**71.288 Professional Practice II** (Prereq. 71.264 Pharmacy IV) 4 Q.H.

Designed to give an overall view of the various types of "over the counter" medications. The directions and precautions for proper use of these preparations are discussed.

**72.230 Drug Analysis** 5 Q.H.\*

A survey of the quantitative analytical techniques applicable to the evaluation and assay of natural and synthetic drugs and their formulations; emphasis on chromatographic, spectroscopic, and other instrumental methods, with selected laboratory experiments in the use of these as defined in official compendia.

**72.253 Medicines Out of the Earth** (Prereq. 12.144, 12.145, 18.131, 18.132) 4 Q.H.

The historical use of plants as drugs and their role in the development of modern medicinal and pharmaceutical preparations. Introduction to a variety of modern approaches to the discovery of new drugs with reference to current research programs employing them. Films, slides, and demonstrations illustrate the techniques involved.

**72.255 Cardiovascular Drugs**

(Prereq. 72.270, 72.271 Med. Chem. Pharm. I & II and Organic Chem. [Undergrad.]) 4 Q.H. Exposes students to current ideas and developments in the area of cardiovascular drug research. Graduate level lectures emphasize the latest concepts regarding the etiology and pathophysiology of cardiovascular disorders and the proposed mechanism of drug action.

Operating in a discussion format, the two-hour undergraduate session emphasizes relevant pharmaceutical aspects of the corresponding lecture presentations, as well as evaluations of the current research literature.

### **72.256 Chemotherapy of Neoplastic Diseases**

(Prereq. Organic Chemistry [Undergrad.] Biochemistry [Undergrad.]) 4 Q.H.

Presents the student with an in-depth understanding of current chemotherapy of neoplastic diseases. Integrates the wealth of basic knowledge and improved investigative techniques, and presents the substantial number of new anti-neoplastic agents which have emerged in the past decade.

### **72.293, 72.294, 72.295 Special Research Project (Medicinal Chemistry)**

(Prereq. permission of instructor with dean's approval) (each) 4 Q.H.

Directed study or research in one of the pharmaceutical sciences. Students may undertake in-depth investigation of an area of specialized interest.

## **Nursing**

### **83.110 Psychiatric Nursing**

(Prereq. 81.101 and 82.101) 8 Q.H.\*

## **Medical Records Administration**

### **86.173 Clinical Seminar**

2 Q.H.

Designed to integrate the didactic and the clinical experience at an early stage. Provides a formal means by which the students can share clinical developments with each other. Provides an opportunity to improve competency in specific areas of medical record practice which may need reinforcement based on clinical activity.

## **Medical Laboratory Science**

### **87.134 Dynamics of Health (replaces 87.131-133)**

2 Q.H.

### **87.150 Basic Medical Laboratory Science I (Prereq. 18.132, 12.104, or 12.107) 3 Q.H.\***

Introductory course in basic medical laboratory science. Principles and theories of renal physiology, with laboratory emphasis on techniques for chemical and microscopic detection of normal and abnormal constituents.

### **87.151 Basic MLS Hematology I**

(Prereq. 18.132, 12.104, or 12.107) 3 Q.H.\*

Introductory course in basic hematology procedures and principles: hemoglobin, hematocrit, white and red blood cell counts, and white cell differentiation.

### **87.152 Basic MLS Hematology II**

(Prereq. 87.151) 3 Q.H.\*

Principles and procedures of hematology, with emphasis on hematologic cell maturation and morphology and basic coagulation.

### **87.153 Basic MLS Immunohematology**

(Prereq. 18.132, 12.104, or 12.107) 3 Q.H.\*

Basic principles in immunohematology, with specific application to the ABO and Rh blood group system, antibody detection, and crossmatch design. Basic blood bank techniques include blood typing and crossmatching.

\*Including lab.

**87.154 Basic MLS Clinical Microbiology** (Prereq. 12.104, 12.107, or 18.132) 6 Q.H.\*  
Basic principles and techniques of organism isolation, cultivation, and identification from clinical specimens. Elementary serologic pr

**87.155 Basic MLS Clinical Chemistry and Instrumentation** (Prereq. 87.150) 5 Q.H.\*  
Principles of clinical chemistry with application to procedures and techniques. Laboratory emphasis on instrumental analysis of specific clinical chemical specimens.

**87.163 Immunohematology Applied Study** (Prereq. 87.153) 2 Q.H.  
Clinical practicum in applied immunohematology at an affiliated, accredited hospital medical technology program.

**87.164 Clinical Microbiology Applied Study** (Prereq. 18.221, 18.154) 5 Q.H.  
Clinical practicum in applied microbiology at an affiliated accredited hospital medical technology program.

**87.165 Clinical Chemistry Applied Study** (Prereq. 87.155, 12.145, 12.171) 5 Q.H.  
Clinical practicum in applied clinical chemistry at an affiliated, accredited hospital medical technology program.

**87.250 Communications in the Health Sciences** (Prereq. 87.152, 87.153, 87.154, 87.155) 4 Q.H.  
Effective communications in the medical scientific community to include journal article construction, resource material, abstracts, and health-related interpersonal communications.

**87.252 Hematology** (Prereq. 87.152) 3 Q.H.  
Physiology of blood cells and bone marrow with a review of hemopoiesis. Discussions of hematologic results as they relate to normal, anemic, and leukemic conditions. Coagulation studies and factor deficiency identification.

**87.253 Immunohematology** (Prereq. 87.153) 2 Q.H.  
Blood group systems, antibody identification, and advanced immunohematologic principles and procedures, including presentation of studies.

**87.254 Clinical Microbiology** (Prereq. 87.154) 5 Q.H.  
Identification and differentiation of bacterial and mycotic organisms of infectious disease significance. Organism virulence and host defense mechanisms are examined.

**87.255 Clinical Chemistry** (Prereq. 87.155, 12.145, 12.171) 5 Q.H.  
Principles and methodologies of current and special clinical chemistry procedures and techniques used in the medical laboratory for the assessment of human physiological conditions. Discussions of clinical chemistry results as they relate to pathophysiological conditions.

**87.280 MLS Special Topics** (Prereq. 87.150-87.155) 2 Q.H.  
A comprehensive examination of one or more current topics in the clinical laboratory.

\*Including lab.



**87.281 MLS Senior Seminar** (Prereq. completion of all clinical courses) 2 Q.H.  
An integration of all aspects of the clinical laboratory, based primarily on a case study presented and reviewed by the student. A mock certification examination is part of the course.

## Military

**91.126 Advanced Leadership Clinic** (replaces **91.115**)

(Prereq. 91.112, 91.113, 91.114) 1.5 Q.H.\*

A blend of classroom, practical exercise, and field training designed to prepare cadets for attendance at advanced camp. Review and instruction in map reading/orienteering, drill and ceremonies, weapons familiarization, and first-aid. Practical exercises in leadership are built around physical training, swimming, and task-oriented situations. Field training is accomplished during one weekend at Fort Devens with an emphasis on achieving minimum requirements in training and physical fitness.

**91.127 Officer Development Seminar** (replaces **91.121, 91.122, 91.123 and 91.118**)

(Prereq. Senior Cadets Only) 2 Q.H.

Designed for senior cadets. Techniques concerning the communicative process and management of resources at the company level are examined. Personal affairs, with an emphasis on financial management, benefits, and estate planning, are discussed. Selected branches of the Army are surveyed. Additional duties of junior officers, the promotion system, personnel management system, schooling and career opportunities are studied.

**91.218 Leadership Laboratory**

1 Q.H.\*

Drill and ceremonies seminars on current Air Force activities.

**91.220 Leadership Laboratory**

1 Q.H.\*

Practice in leadership position. Evaluation, analysis, and problem solving.

**91.222 Leadership Laboratory**

1 Q.H.\*

Group problem solving. Staff training experience through a class project requiring a written report.

**91.224 Leadership Laboratory**

1 Q.H.\*

Advanced leadership experiences, including staff studies.

**91.226 Leadership Laboratory**

1 Q.H.\*

Continues orientation for Air Force officer duties. Study of officer specialties and career patterns.

## Interdisciplinary Courses

**93.152 Physical Biochemistry**

4 Q.H.

Bioenergetics, enzymes, and enzyme kinetics, with application to central area of metabolism biooxidation and reduction processes.

**93.154 Introductory Biochemistry Laboratory** (replaces **12.189**)

(Prereq. 93.151 or equiv.) 2 Q.H.\*

Introduction to basic biochemical laboratory techniques and procedures used to study proteins, nucleic acids, lipids, and carbohydrates.

**93.160 American Musical Theatre (Fall and Winter)**

4 Q.H.

An interdisciplinary course, taught by the departments of Drama and Music. The development of the American musical, from the *Black Crook* to *Hair* and *Jesus Christ Superstar*, as an entertainment and as a serious art form, through an examination of script, score, dance, and design. Works by Bernstein, Rodgers and Hammerstein, the Gershwins, Weill, Lerner and Loewe, and Cole Porter are examined. Guest lecturers, recordings, films, live productions supplement the course.

\*Including lab

Academic Calendar 1977-1979

September 1977

5	Monday	LABOR DAY. University closed.
6-9	Tuesday-Friday	Final Examinations for Basic Colleges.
12-24	Monday-Saturday	Division A vacation.
15	Thursday	FALL COMMENCEMENT.
26	Monday	Beginning of 1977-1978 academic year. Upper class registration for Divisions A and C. Boston and Burlington freshmen complete their registration. No Basic Colleges classes today.

October 1977

10	Monday	COLUMBUS DAY. University closed.
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November 1977

11	Thursday	VETERANS' DAY. University closed.
24-26	Thursday-Saturday	THANKSGIVING DAY recess.

December 1977

12-16	Monday-Friday	Final Examinations for Basic Colleges.
19-Jan. 2	Monday-Friday	CHRISTMAS vacation.

January 1978

2	Monday	NEW YEAR'S DAY Observance University closed.
3	Tuesday	Registration for upper-class Divisions B and C. Registration for freshmen (Quarter Two) at Boston Campus, Burlington Campus, and January freshmen section of Class of 1982. Beginning of Winter Quarter. Beginning of Division A work quarter. No Basic Colleges classes today.
16	Monday	MARTIN LUTHER KING, JR'S. BIRTHDAY. University closed.

February 1978

20	Monday	WASHINGTON'S BIRTHDAY. University closed.
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March 1978

20-24	Monday-Friday	Final Examinations for Basic Colleges.
27-31	Monday-Friday	Vacation period for all students in all colleges and schools (Division B vacation).

April 1978

3	Monday	Registration for Divisions A and C students and Division B seniors. Registration for freshmen (Quarter Three) at Boston Campus, Burlington Campus, and January freshmen (Quarter Two). Beginning of Spring Quarter. Beginning of Division B work period. No Basic Colleges classes today.
17	Monday	PATRIOTS' DAY. University closed.

May 1978

29	Monday	MEMORIAL DAY. University closed.
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June 1978

12-16	Monday-Friday	Final Examinations for Basic Colleges.
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18	Sunday	COMMENCEMENT.
19-23	Monday-Saturday	Division A vacation.
26	Monday	Registration for Divisions B and C and January freshmen (Quarter Three) Beginning of Summer Quarter. Beginning of Division A work quarter. No Basic Colleges classes today.
<b>July 1978</b>		
4	Tuesday	INDEPENDENCE DAY. University closed.
<b>September 1978</b>		
4	Monday	LABOR DAY. University closed.
5-8	Tuesday-Friday	Final Examinations for Basic Colleges.
11-23	Monday-Saturday	Division B vacation.
14	Thursday	FALL COMMENCEMENT.
25	Monday	Beginning of 1978-1979 academic year. Upper-class registration for Divisions B and C. No Basic Colleges classes today.
<b>October 1978</b>		
9	Monday	COLUMBUS DAY. University closed.
<b>November 1978</b>		
11	Saturday	VETERANS' DAY. University closed.
23-25	Thursday-Saturday	THANKSGIVING DAY recess.
<b>December 1978</b>		
11-15	Monday-Friday	Final Examinations for Basic Colleges.
18-Jan. 1	Monday-Friday	CHRISTMAS vacation.
<b>January 1979</b>		
1	Monday	NEW YEAR'S DAY. University closed.
2	Tuesday	Registration for upper-class Divisions A and C. Registration for freshmen (Quarter Two) at Boston Campus, Burlington Campus, and January freshmen section of Class of 1983. Beginning of Winter Quarter. Beginning of Division B work quarter. No Basic Colleges classes today.
15	Monday	MARTIN LUTHER KING, JR'S. BIRTHDAY. University closed.
<b>February 1979</b>		
19	Monday	WASHINGTON'S BIRTHDAY. University closed.
<b>March 1979</b>		
19-23	Monday-Friday	Final Examinations for Basic Colleges.
26-31	Monday-Saturday	Vacation period for all students in all colleges and schools (Division A vacation).
<b>April 1979</b>		
2	Monday	Registration for Divisions B and C students and Division A seniors. Registration for freshmen (Quarter Three) at Boston Campus, Burlington Campus, and January freshmen (Quarter Two). Beginning of Spring Quarter. Beginning of Division A work period. No Basic Colleges classes today.
16	Monday	PATRIOTS' DAY. University closed.
<b>May 1979</b>		
28	Monday	MEMORIAL DAY. University closed.
<b>June 1979</b>		
11-15	Monday-Friday	Final Examinations for Basic Colleges.
17	Sunday	COMMENCEMENT.
18-23	Monday-Saturday	Division B vacation.

25	Monday	Registration for Divisions A and D and January freshmen (Quarter Three). Beginning of Summer Quarter. Beginning of Division B work quarter. No Basic Colleges classes today.
<b>July 1979</b>		
4	Wednesday	INDEPENDENCE DAY. University closed.
<b>September 1979</b>		
3	Monday	LABOR DAY. University closed.
4-7	Tuesday-Friday	Final Examinations for Basic Colleges.
10-22	Monday-Saturday	Division A vacation.
13	Thursday	FALL COMMENCEMENT.
24	Monday	Beginning of 1978-1979 academic year. Upper-class registration for Divisions A and C. Boston and Burlington freshmen complete their registration. No Basic Colleges classes today.















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